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A method for evaluating the design of websites for birthing hospitals in Shanghai

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A method for evaluating the design of websites for birthing hospitals in Shanghai

by

Fei Huang

A thesis submitted to the graduate faculty

in partial fulfillment of the requirements for the degree of

MASTER OF FINE ARTS

Major: Graphic Design

Program of Study Committee:

Debra Satterfield, Major Professor

Roger E. Baer

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Iowa State University

Ames, Iowa

2009

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I dedicate this thesis to my husband, Wei Zhou.

TABLE OF CONTENTS

LIST OF FIGURES.....	vi
LIST OF TABLES.....	xi
ACKNOWLEDGEMENTS.....	xii
ABSTRSCT	xiii
CHAPTER 1. INTRODUCTION	1
1.1 Problem Statement.....	1
1.2 Purpose of the Study	1
1.3 The Proposed Method	2
1.4 Significance	2
CHAPTER 2. BACKGROUND	3
2.1 Brief Overview of Internet Development in China	3
2.1.1 Childbirthing hospital website in Shanghai.....	3
2.1.2 Types of childbirthing hospital websites in Shanghai.....	4
2.2 Overview of Shanghai and its Healthcare Services System.....	6
2.2.1 From market town to treaty port	6
2.2.2 After twentieth century	6
2.2.3 The distribution of childbirthing hospitals in Shanghai	9
2.3 Findings of Background Study	10
CHAPTER 3. LITERATURE REVIEW	12
3.1 Studies of Maternity.....	12
3.1.1 The changes of childbirth in China	12
3.1.2 Studies on acceptance of One-Child Policy in Shanghai	22
3.1.3 Physical, emotional, and cognitive challenges in early pregnancy.....	24
3.1.4 Findings of maternity studies.....	25
3.2 Studies of Culture	26
3.2.1 Role of Chinese cultural values on consumer satisfaction study.....	26

3.2.2 Market Segmentation	32
3.2.3 Findings of culture studies.....	34
CHAPTER 4. EVALUATION TOOLS	36
4.1 Introduction of Evaluation Tools.....	36
4.1.1 The combination tool	36
4.1.2 Introduction of photographic method.....	37
4.1.3 Integrating defined assessments into design variables by a reliable source	38
4.2 Survey in Shanghai	38
4.2.1 Profile of participants	39
4.2.2 Survey development.....	39
4.2.3 Survey instrument	45
4.2.4 Procedures.....	48
4.2.5 Discussion.....	49
4.2.6 Findings of the survey's results	55
4.2.7 Limitations of the survey	56
4.3 Elaboration of the Visual Elements and Their Potential Impact on Clarification of the Information on Website Layout Design.....	57
4.3.1 Color.....	58
4.3.2 Findings of color study	66
4.3.3 Typography.....	66
4.3.4 Findings of typeface study.....	77
4.3.5 Image usages.....	78
4.3.6 Findings of image study	96
4.3.7 Negative/positive space and hierarchy	96
4.3.8 Findings of negative/positive space and hierarchy study	101
CHAPTER 5. EVALUATION OF FIVE EXISTING WEBSITE DESIGNS IN SHANGHAI	102
5.1 Features of Five Selected Hospitals.....	102

5.2 Explanations of Evaluation Method for Five Childbirthing	
Hospitals in Shanghai	107
5.2.1 Yangpu District Maternity and Child Health Hospital	109
5.2.2 International Peace Maternity Child Health Hospital of the China Welfare Institute.....	114
5.2.3 Shanghai Second Medical University Affiliated Xinhua Hospital	121
5.2.4 Shanghai Changing Maternity and Child Health Hospital	126
5.2.5 Pathway Health	131
CHAPTER 6. CONCLUSIONS	137
APPENDIX A. INSTITUTIONAL REVIEW BOARD APPROVAL	138
APPENDIX B: LETTER OF INFORMATION	140
APPENDIX C: SURVEY INSTRUMENT	142
REFERENCES.....	148

LIST OF FIGURES

Figure 1 An example of an image dominated website	4
Figure 2 An example of a text dominated website.....	5
Figure 3 An example of mixed dominance website.....	5
Figure 4 The distribution of childbirthing hospitals in Shanghai	10
Figure 5 An illustration showing tradition social mores between males and females	15
Figure 6 An illustration of a traditional childbirth setting.....	15
Figure 7 Nurses and patients in church that located at Western Medicine Hospital built in China, 1930s	17
Figure 8 Barefoot doctor, in rural Chinese area, 1968	19
Figure 9 One-Child Policy posters, 1970s-1980s	20
Figure 10 Water birthing room hospital,Guangzhou 2007	21
Figure 11 Daole in China, Shengzheng	21
Figure 12 Interpretations of consumer satisfaction/dissatisfaction.....	27
Figure 13 Childbirthing Hospitals and their set of features.....	44
Figure 14 (Left) The accurate red that represents authorities in China.....	60
Figure 15 (Right) The accurate yellow that represents authority in China	60
Figure 16 The accurate gold that represents authority in China	60
Figure 17 (Left) The accurate gold that represents status in China	61
Figure 18 (Right) The accurate blue that represents status in China	61
Figure 19 (Left) The accurate red that represents good luck, good fortune, joy, and fertility in China	62
Figure 20 (Right) The accurate orange that represents joy in China	62
Figure 21 The accurate green that represents valuable, desirable and vital in China	63
Figure 22 Warm colors provide a feeling of welcome	64
Figure 23 Cool colors give a feeling of distance	64
Figure 24 Advantage of using certain colors letter on certain background.....	66

Figure 25 Zhong Hei, Da Hei, and Zong Yi.....	69
Figure 26 Chinese Typeface Xing Kai, Shu Tong, Da Lishu, Zhong Yuan, Cu yuan, and Xiu Ying.....	70
Figure 27 The height of a 12-point Chinese character “字” is varied in nine Chinese typefaces.....	71
Figure 28 The width of a 12-point Chinese character “字” is varied in nine Chinese typefaces.....	71
Figure 29 (Left) The word “Exit” in a small point size.....	72
Figure 30 (Right) The word “Exit” in a large point size.....	72
Figure 31 Words “Heavy” in variations of font weight in the Helvetica family	73
Figure 32 A demonstration of how stroke width is measured.	75
Figure 33 A diagram of nine Chinese fonts in font weight hierarchy order.....	75
Figure 34 Couplets by Wang Wei (701-761).....	77
Figure 35 (Left) An image of pre-birthing room shot from a distance	79
Figure 36 (Right) An image of a closer shot of a pre-birthing room	79
Figure 37 (Left) An image of outside view of a pre-birthing room	80
Figure 38 (Right) An image of pre-birthing room shot from distance.....	80
Figure 39 (Left) An example of appropriate cropping of a hospital lobby image.....	80
Figure 40 (Right) An example of inappropriate cropping of a hospital lobby image.....	80
Figure 41 (Left) Details of a birthing center’s logo	81
Figure 42 (Right) Details of a birthing center’s logo	81
Figure 43 (Left) Staff portrait with clean background	82
Figure 44 (Middle) Close shot staff portrait with clean background	82
Figure 45 (Right) Staff portrait with other staffs and patients as background.....	82
Figure 46 Portraits of multiple staff members	83
Figure 47 Staff portrait with different Nationalities.....	83
Figure 48 (Left) A Portray indicate Western dominant services	84
Figure 49 (Right) A Portray indicate a combination of Western and Asian services	84
Figure 50 (Left) A staff portrait that suggests carelessness through posture.....	85

Figure 51 (Middle) A staff portrait that suggests carelessness through posture	85
Figure 52 (Right) A staff portrait that shows nervousness through the hand gesture	85
Figure 53 Staff members' portraits indicates different meanings in Chinese and American culture	86
Figure 54 An image showing an ambiguous hand gesture	86
Figure 55 A staff member's portrait with the faces covered by masks	87
Figure 56 (Left) A staff image taken from a high angle	87
Figure 57 (Right) A staff image taken from a low angle	87
Figure 58 A portrayal of a satisfied patient with family members and staff in the background.....	88
Figure 59 A record package using an image of a famous person.....	89
Figure 60 (Left) An image showing both patient and staff facial expressions	90
Figure 61 (Right) An image showing only show staff's facial expressions	90
Figure 62 (Left) A staff member squats to apply treatment.....	91
Figure 63 (Right) A staff member stands to apply treatment.....	91
Figure 64 (Left) A staff member listens attentively	91
Figure 65 (Right) A staff member assists with a patient	91
Figure 66 (Left) A hand gesture means "ok" in America.....	92
Figure 67 (Right) A typical hand gesture of Buddha in China	92
Figure 68 (Left) A staff member smiles while looking at the camera.....	92
Figure 69 (Right) A staff member smiles while having eye contact with a patient	92
Figure 70 A staff member portrayed with a dark light setting	93
Figure 71 (Left) An image shows continuous support	94
Figure 72 (Right) An image shows attentive listening.....	94
Figure 73 An image shows patient is closely connected to staff	94
Figure 74 (Left) An image shows staff manipulating equipment	95
Figure 75 (Middle) An image shows staff standing behind equipment.....	95
Figure 76 (Right) An image that only shows equipment but no staff	95
Figure 77 (Left) Chairman Mao meeting with medical staff.....	96

Figure 78 (Right) Chinese soccer team returning with a golden cup	96
Figure 79 A mockup website layout before the staff figure on the left is die-cut from the background of the image	97
Figure 80 A mockup website layout after the staff figure is die-cut from the background.....	98
Figure 81 A mockup website layout before adding colored blocks into the text.....	99
Figure 82 A mockup website layout after the text is arranged into colored blocks	99
Figure 83 A mockup website layout before the image on the right are reduced in size..	100
Figure 84 A mockup website layout after the image are reduced in size	100
Figure 85 A mockup website layout showing both black and white text on a green background	101
Figure 86 Childbirthing hospitals and their set of features	103
Figure 87 Evaluation of YP DMCH website-Color	109
Figure 88 Evaluation of YP DMCH website-Typeface	110
Figure 89 Evaluation of YP DMCH website-Image	111
Figure 90 Evaluation of YP DMCH website-Negative and positive space.....	112
Figure 91 Evaluation of IP MCH website-Color	114
Figure 92 Evaluation of IP MCH website-Typeface.....	115
Figure 93 Evaluation of IP MCH website-Typeface (continue).....	116
Figure 94 Evaluation of IP MCH website-Image	117
Figure 95 Evaluation of IP MCH website-Image (continue).....	118
Figure 96 Evaluation of IP MCH website-Negative and positive space.....	119
Figure 97 Evaluation of SH XHH website-Color	121
Figure 98 Evaluation of SH XHH website-Typeface.....	122
Figure 99 Evaluation of SH XHH website-Image	123
Figure 100 Evaluation of SH XHH website-Image (continue).....	124
Figure 101 Evaluation of SH XHH website-Negative and positive space	125
Figure 102 Evaluation of SH CNH website-Color	126
Figure 103 Evaluation of SH CNH website-Typeface	127

Figure 104 Evaluation of SH CNH website-Image.....	128
Figure 105 Evaluation of SH CNH website-Image (continue).....	129
Figure 106 Evaluation of SH CNH website-Negative and positive space	130
Figure 107 Evaluation of P H website-Color.....	131
Figure 108 Evaluation of P H website-Typeface	132
Figure 109 Evaluation of P H website-Image.....	133
Figure 110 Evaluation of P H website-Images (continue).....	134
Figure 111 Evaluation of P H website-Negative and positive space.....	135

LIST OF TABLES

Table 1 Positive birthing experience age distribution	49
Table 2 Positive birthing experience education distribution	50
Table 3 Positive birthing experience five assessment measures distribution	51
Table 4 A collective inventory of visual elements of five selected website	57
Table 5 A collective inventory of typefaces used in the five selected websites.....	68

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ABSTRSCT

Identifying a problem for a target-oriented project and providing effective solutions within a specific social and cultural context is challenging for trained designers who work on cross-cultural projects. This thesis documents the process of developing an effective method to assist these designers. The design of websites for childbirthing hospitals in Shanghai will be used as an example to show how this methodology can be applied to a complex target-oriented design project and integrate design principles to fulfill specific social, cultural, and emotional needs of the consumers. Furthermore, this method is easy to follow and also can be easily adapted to study other target-oriented designs associated with social and cultural contexts.

CHAPTER 1. INTRODUCTION

1.1 Problem Statement

Design for people with unique needs has been widely studied in many disciplines, such as marketing, psychology, biology, and graphic design. The objectives of these studies are varied among fields. For example, psychologists are interested in identifying problems, but most biology projects are focused on solving problems. Graphic design, on the contrary, is a field that considers both of these objectives through its design process. In fact, to accurately identify a problem for a target audience and provide an effective solution for it within a specific social and cultural context is a challenge for designers who work on cross-cultural projects. Because of its complexities, to successfully achieve these tasks requires a good understanding of culture and its impact on the project's target audience. The understanding is built on learning many aspects of a society, including language, knowledge, laws, and customs that give the specific society its distinctive character and personality (Schiffman & Kanuk, 2007).

1.2 Purpose of the Study

This thesis will develop an effective design evaluation method for trained designers to use to evaluate websites for childbirthing hospitals in Shanghai. The subject of childbirthing hospitals was selected as an example to show how this evaluation method can be applied to a complex target audience with very specific social, emotional, and cultural needs. And how it can help graphic designers integrate information about these specific needs into their designs.

1.3 The Proposed Method

The proposed method consists of five components: 1) background study, 2) literature review, 3) survey, 4) studies of basic design principles, and 5) evaluation. The findings from the background study provide a point of departure for this study. The summary of the literature review gives a solid foundation for building qualitative assessments for the evaluation. The results of the survey provide both qualitative and quantitative assessments, based on needs of the target audience as indicated by their responses. A study of basic design principles' provides a set of targeted design solutions that fulfill the identified needs of the target audience. The evaluation examines whether or not the identified assessments are achieved and provides recommendations for design solutions based on the outcomes of the survey.

1.4 Significance

Since design research is relatively young compared to research in other disciplines, many research methods used in the field of design are borrowed from other disciplines. This study provides an adaptable method for design research that is made for designers who work on cross-cultural projects. For this thesis, it is being used to evaluate childbirth hospital websites in Shanghai, however it can also be adapted and applied to evaluate other design topics associated with social, emotional, and cultural factors.

CHAPTER 2. BACKGROUND

This chapter will demonstrate the evaluation method for childbirth websites in Shanghai. It gives a brief introduction to the development of the Internet and to the introduction of childbirthing hospital websites as a marketing tool in China. It also provides an overview of Shanghai and its Healthcare Service System. The end of this chapter is a summary of the findings gleaned from this information.

2.1 Brief Overview of Internet Development in China

In the middle 1990s, three decades after the first developed protocols which allowed sending and receiving messages through computer by U.S. researchers, the World Wide Web emerged (Harner & Lyon, 1996; Warshauer, 2001) and at the same time, the Internet in China went through a dramatic period of growth. According to the statistics of a quasigovernmental agency in charge of Internet-related affairs, China Internet Network Information Center (CNNIC 1997-2009), China had 620,000 Internet users in 1997. This number increased to 298,000,000 by the end of 2008. According to this report, 22.6% of the Chinese populations are Internet users, and most users live in economically-developed urban areas, such as Beijing, Shanghai, and Guangdong. The majority of the Internet users are office employees, who live in cities (Han & Zhang, 2009).

2.1.1 Childbirthing hospital website in Shanghai

Until recently, Chinese childbirthing hospitals' websites were not widely developed to promote childbirthing services. Traditionally, most expectant women receive information about childbirthing hospitals by word-of-mouth. This is an easy and efficient

form of marketing for most hospitals because publishing advertisements about healthcare-related services in Shanghai must meet many strict laws to maintain truthfulness as verified by government officers who review the advertisements. However, in China, a website is not considered to be an advertisement. As noted in the last paragraph, the rapid increase of Internet users from 1997 to 2008 (CNNIC, 1997-2009) makes the Internet an attractive place to advertise services by providing pertinent information to potential customers.

2.1.2 Types of childbirthing hospital websites in Shanghai

Based on observations, childbirthing hospitals' website page layouts in Shanghai can be roughly divided into three categories: 1) image dominated (Figure 1), 2) text dominated (Figure 2), and 3) mixed dominance, where text and images are equally used (Figure 3). These websites are neither commercial websites nor state-owned websites. They are providing basic service-related information. However, the content of the websites must conform to states law.



Figure 1 An example of an image dominated website



Figure 2 An example of a text dominated website



Figure 3 An example of mixed dominance website

2.2 Overview of Shanghai and its Healthcare Services System

2.2.1 From market town to treaty port

Shanghai, located in south-central China, was originally a fishing village in one of the richest regions of China for over 2,000 years. “The city owed its primacy to the combination of an advantageous location, strong commercial interests, and favorable government policies,” (Johnson, 1995, p. 21). From the mid-fifteenth century to the late nineteenth century, Shanghai was transformed from a “land of fish and rice” into the heartland of China’s modern cotton industry (Johnson, 1995, p. 43). Shanghai grew rapidly during the Ch’ing Dynasty because of “the continued prosperity of cotton and expansion in commercial activities,” (Johnson, 1995, p. 96). During the first half of the nineteenth century, Shanghai became a city built by its mercantile guilds and was ready for the transformation. The first direct foreign trade at the port of Shanghai opened November 4, 1843, after British Consul George Balfour’s proclamation (Johnson, 1995, p. 205) and “now, Shanghai is an important seaport, its historical significance as international trade center makes Shanghai a very cosmopolitan region with many multi-cultural influences,” (Satterfield & Huang, 2007, p. 2).

2.2.2 After twentieth century

Some Americans may know Shanghai as a municipal city in China, now divided into 18 districts and 1 county. The city has 132 towns, 3 townships, 99 sub district committees, 3,393 neighborhood committees, and 2,037 villagers' committees by the end of 2002. The city's 18 districts cover a total area of 6,340.5 square kilometers. A report from World

Health Organization (WHO) stated that “by the end of 2002, Shanghai's population had grown to 13.3423 million (according to the permanent residence registration), representing 1% of China's total. In 2002, the average population density in the city stood at 2,014 people per square kilometer,” (WHO, 2004, p. 2).

Social context

The population in 18 districts of Shanghai has a significant difference. At 1998, there are only two districts have over 1,000,000 people—1,080,300 in Yangpu district and 1,561,800 in Pudong new district. According to a survey conducted by WHO, Shanghai is the first area to report a negative population growth rate in China since 1993. “The natural population growth rate was -0.26%, the fertility rate of 17.91%, birth rate reaching 0.47% and mortality rate 0.73%. The elderly population aged 60 years and over is 2471.02 thousands, accounting for 18.6%. The life expectancy is 79.52 years (77.36 for male and 81.63 for female),” (WHO, 2004, p. 4).

The education level of Shanghai’s population has been steadily improving. Based on results from the 5th national census, 11.4% of the city’s population aged 6 and above had a college-equivalent education in 2000, 4.3% more than in 1990. From the total local population, 23.9% had a senior high school education and 38.2% had a middle school education. “The segment of local population with primary school education fell by 11.1 percentage point. Only 5.4% of total local population aged 15 and above had no education or very little schooling,” (WHO, 2004, p. 4).

Economic context

Although the population is only 1% and the land area is 0.06% of the total nation,

Shanghai plays a very important role in the nation's social and economic improvement. (WHO, 2004, p. 4) The city's continuously fast development increased its average per capita GDP. "In 2002, the city's per capita GDP reached 4,912 US dollars, the highest among all Chinese provinces, municipalities, autonomous regions, except for Hong Kong, Macao, and Taiwan. In 2002, the city realized a total financial income of 220.225 billion yuan, including 71.979 billion yuan in local financial revenue, up 10.4% and 30%, respectively, over the previous year," (WHO, 2004, p. 2).

Social Welfare System

According to WHO, there are basically "three security systems" in Shanghai. These security systems guarantee the local population, who has special needs, covers their basic living costs. They include: 1) the basic living expenses for urban laid-off workers, 2) an unemployment insurance system, and 3) a minimum living expense assurance system in the urban areas.

General organization of Health Services System

The health service system in Shanghai is mixed. "The health services system consists of Shanghai Municipal Health Bureau (SMHB) and its sub agencies. There are 24 departments within the SMHB—8 for administrative functions and 16 line departments with specific programs or functional authority," (WHO, 2004, p. 5). Shanghai SMHB includes seven types of sub agencies: 1) 432 hospitals, 2) 3210 out-patient departments, 3) 5 nursing homes, 4) 57 institutions for health prevention and health care, 5) 14 medical research institutions, 6) 75 other health organizations, and 7) 723 private health sub sectors in Shanghai (WHO, 2004, p. 5).

The medical professionals who work for SMHB include doctors of “traditional Chinese medicine, doctors of western medicine, senior nurses, pharmacists, laboratory technicians, other technicians, paramedics of Chinese medicine, paramedics of western medicine, junior nurses, midwives, junior pharmacists, junior laboratory technicians, other junior technicians, and other junior medical technical personnel,” (WHO, 2004, p. 2). The educational level of these medical professionals varies greatly.

The health care facilities are very different in the urban and rural areas. Since this thesis focuses on the urban areas in Shanghai, the health care facilities in rural areas will not be discussed.

2.2.3 The distribution of childbirthing hospitals in Shanghai

There are three tiers of health services in Shanghai. These tiers are divided by scale and services. 1) The primary tier of healthcare service are mainly provided by community health services centers. 2) The secondary tier of health services are those provided by mainly district level hospitals and clinics in urban areas or county level facilities. 3) The third tier of services is those provided by municipal and university hospitals (WHO, 2004).

Childbirthing services are provided mainly by second and third tier service providers. Figure 4 shows a distribution of childbirthing hospitals in Shanghai. The eighteen districts are color coded. Red dots represent the third tier hospital and purple dots represent the secondary tier hospitals. There are about 68 hospitals/clinics in Shanghai that provide childbirthing services; each district has at least two. Yangpu and Pudong district, which

have over 1,000,000 people each have more childbirthing hospitals than the other districts—8 in Yangpu, and 13 in Pudong.

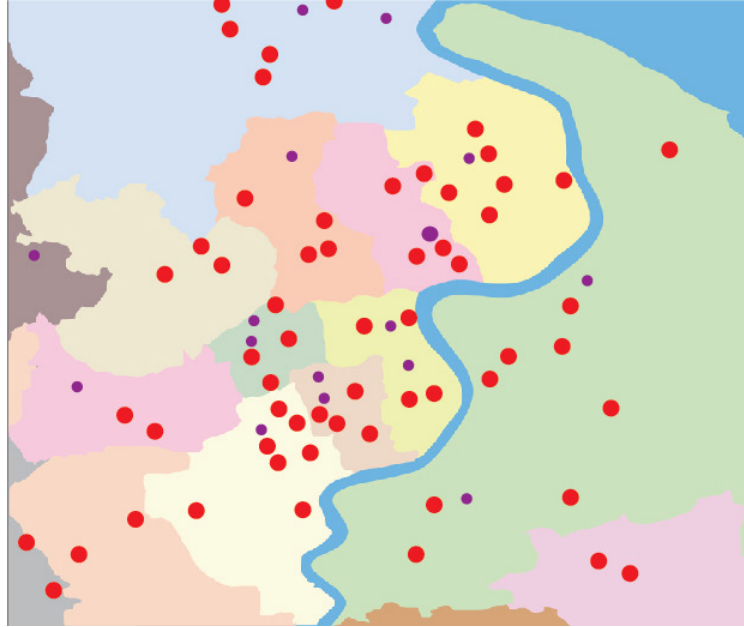


Figure 4 The distribution of childbirthing hospitals in Shanghai

2.3 Findings of Background Study

There are four major findings from the background studies. These findings provide several points of departure that lead to the method development stage, which assembles useful or relevant literature for building the qualitative assessment tool.

First, the development of the Internet in China and changes in the way expectant mothers obtain birthing hospitals' information indicates that this study needs to focus on clarifying the information located on websites. In addition, the physical, social, and emotional factors that influence expectant mothers' decision-making needs to be taken into consideration.

Second, the characteristics of three types of websites raise the question of how

images can effectively help with information delivery.

Third, the historical impact of the West on Shanghai has given this city a unique character and personality. It identifies the need for a study on the changing expectation with regard to childbirth in China. This also brings about a need for a study on the role of Chinese cultural values in people's decision-making and a survey to study of the changing attitudes about childbirthing in Shanghai.

Fourth, adequate healthcare services and steady improvements in the education level of Shanghai's population indicate the necessity and potential for a new marketing segment for childbirthing hospitals.

CHAPTER 3. LITERATURE REVIEW

Based on the findings of background studies in Chapter 2, five aspects that can be used to create a successful website for expectant mothers in Shanghai are discussed in this chapter. These aspects are categorized into two sections, one is the study of maternity and the second is the study of culture. A discussion of the findings will be given at the end of each section. These five aspects aim to answer the following questions:

- 1) What are the changes in childbirth in China?
- 2) What does the acceptance of the One-Child Policy in Shanghai indicate?
- 3) What are the physical, emotional, and cognitive challenges expectant mothers face in the early stage of pregnancy?
- 4) What are Chinese cultural values and how do they affect consumer decision-making?
- 5) What does “marketing opportunities” in the blue-collar market mean to the expectant mothers’ market?

3.1 Studies of Maternity

3.1.1 The changes of childbirth in China

The following literature review will demonstrate and discuss the role of culture in childbirth in Shanghai, China. In particular, the evolution of childbirth, the impact due to the influence of western culture, and changes in childbirth is discussed.

Childbirth is one of the most important social and family events in almost all cultures. It is also highly dependent on culture in terms of healthcare, clinical practice, and

treatment. In Chinese tradition, there are many customs and taboos surrounding the state of pregnancy, childbirth, and even early infancy. For example, most Chinese believe that once pregnant, a woman needs to guard her thoughts, since everything she does and sees will influence her unborn child. On the other hand, during the past century, western cultures have greatly influenced China in many perspectives, including the views and acts of childbirth. Therefore, childbirth in China has experienced a series of changes.

Chinese traditional culture in pregnancy and childbirth

Similar to the Zodiac and Chinese Lunar Calendar, Chinese traditional culture in pregnancy and childbirth has assimilated new ideas, based on changing experiences and beliefs, and has continued develop over thousands of years. The traditions of Chinese culture in pregnancy and childbirth can be classified into three categories. These categories are traditions of pregnancy, birth, and postpartum.

Traditions of pregnancy

Since Chinese believe that what affects a woman's mind will also affect her unborn baby; once a woman is pregnant, she should read beautiful stories and good poetry. It is also recommended that the pregnant woman surround herself with nice and beautiful things to make her life good so the baby will be pretty and charming. During pregnancy, there are also many taboos in food. Eating squid is forbidden, since it is believed to cause the uterus to 'stick' during delivery. Pregnant women should not work with glue or other adhesives, since Chinese believe they may cause birthing complications. Using a hammer and nails are also not recommended, since they are believed to cause deformity.

Traditions of birth

When a pregnant woman delivers her baby at home, males are not allowed in the same room before the baby is born. Only a middle-aged or senior female, who has experienced birth, is qualified to assist.

Traditions of postpartum

After childbirth, the new mother is required to stay indoors for about one month to ensure adequate rest and a complete recovery. For the new born baby, the first month at home bonding with its mother is the time to protect it from many outside viruses. It is suggested that postpartum women eat food, such as pork and eggs, that contain high protein. These will help her replenish the blood lost during delivery. This practice is based on the belief that a postpartum woman, who does not have adequate rest and nutrition, will suffer arthritis and other ailments in her old age.

Traditions such as these have continued for many generations and have not significantly changed for hundreds of years. However, a series of changes have been made in childbirth in China during the past few centuries. Most of these changes are due to the impact of western culture. Based on a literature review and data research, a summary of the key changes in different time periods will aid in understanding the evolution of childbirth in China.

Evolution of childbirth in China during the past century

Ch'ing Dynasty (1644-1911)

In Ch'ing Dynasty, Confucianism was one of the main ideologies in society. Pregnancy, childbirth, and infancy, as revealed by popular medical texts of the Ch'ing

Dynasty, were socially organized to support the form of gender subordination required by Confucian familism and to reinforce its moral values. Men and women should maintain a proper distance from each other, including doctors and patients (Figure 5). Because of the custom of female seclusion, birth in China, even more than in Europe, was a business from which men normally were excluded (Figure 6). Ming-Ch'ing's written codes of medical ethics suggest that male physicians could gain limited access to a woman's bedside, but in the case of childbirth, this was probably only in extreme emergencies (Furth, 1987, pp. 8, 18).



Figure 5 An illustration showing tradition social mores between males and females



Figure 6 An illustration of a traditional childbirth setting

Most Chinese birth traditions have their origins in the Ch'ing Dynasty. Almost all women gave birth at home, attended by a female relative or "knowledgeable" woman called "jie sheng po." "Jie sheng po" usually was a middle-aged or older woman who was illiterate and untrained in medical texts. During the delivery, they were the only respectable associates for the pregnant woman. These women determined the proper time for the mother to assume the delivery position for childbearing and to deliver the child. They made sure that the newborn infant did not fall on the ground and also cut the umbilical cord.

There are a few records of western medicine practices in China from this time, but only a few of them really assisted with childbirth in Chinese families. Western doctors working in the treaty ports in the nineteenth century sometimes reported being called in to aid a delivery, but usually only "when all hope is fled," (Furth, 1987, p.18).

From 1920s to 1930s

While Western physicians were refused in China, childbirth in the West made further progress. By the 1920s, obstetrics and gynecology became a medical specialty. At the same time, home birthing and midwifery became less popular, as more and more women turned to birthing in hospitals.

In China, after Western medicine had been introduced for several decades, many Chinese saw Westernization of much of China's culture and society as necessary for survival, and they willingly and actively sought out Western medical knowledge.

The Chinese tradition on "Jiesheng Po" was modified during this time period. When the 1911 revolution brought an end to the Manchu Dynasty, the new publican government

came to accept Western biomedicine. As of 1928, midwives were required to register with the government, like physicians and pharmacists, and would be called “delivery ladies.”

The first midwifery school was established in Beijing in 1929 by the American Medical Association, a foreign organization. An Integrated Chinese and Western Medicine Hospital was built in 1929 in the Zhejiang Province. Also known as the Red Cross Hospital in Hangzhou, Zhejiang University of Traditional Chinese Medicine subsidiary Integrated Chinese and Western Medicine. The activities in the hospital are associated with Western religions (Figure 7). It is the country's first three-level integrated combination Chinese and Western Medicine Hospital.



Figure 7 Nurses and patients in church that located at Western Medicine Hospital built in China, 1930s

However, the school's education combined Western medical practice with Chinese culture because society's attitude toward childbirth was still influenced by cultural traditions of Confucianism, Daoism, and Buddhism; in order to maintain Chinese women's seclusion, only women between 30 and 60 could be considered qualified to attend a woman during childbirth. Two years later, in 1931 a missionary doctor, Marian

Manly, opened another school of midwifery in Chengdu, China. While students accepted the Westernization of what had been an important female occupation, they held steadfast to their cultural traditions, staying true to Chinese beliefs to meet their unique social needs (Furth, 1987).

From 1940s to 1950s

By the 1940s, more than 80% of the women gave birth in a hospital in a surgical environment. This number reached 95% in 1950. During delivery, women were given heavy drugs to disconnect them from the perceptions of pain and placed under general anesthesia for the birth of their child (Brown, 2008).

Chinese midwifery and nursing education improved slowly during the 1940s-1950s. It was during this time that the anti-Japan War and the Civil War took place. There were not many changes to childbirth recorded during this time. After 1949, a major upheaval began in mainland China, followed by the government being taken over by the Communist Party. By 1952, a Soviet-modeled education system had come into effect in mainland China and all post-secondary and undergraduate midwifery schools were closed.

Since establishment of People's Republic of China

Maoism was widely applied as the political and military guiding ideology by the Communist Party of China (CPC). In May 1966, the Cultural Revolution began. According to Maoism, many birth traditions, based on Confucian, were considered poisonous from old words that needed to be squelched in order to establish new words. By the 1960s, in urban China, almost all women delivered their baby at a hospital.

However, during the Cultural Revolution, most government offices were taken over by the Red Guard, which included birthing hospitals. In a documentary film about the Cultural Revolution, a senior woman stated that in January of 1969, she went into labor in a hospital in Beijing and experienced a difficult delivery. She almost died. All doctors in the hospital were interrogated by the Red Guard because they were knowledgeable in childbirthing.

In rural areas during this time, most women delivered at home with the help of a barefoot doctor (Figure 8), an occupation founded during the Cultural Revolution. Most of these doctors were lay practitioners, including urban "educated youth" (mostly graduates from junior and senior high schools). Chinese barefoot doctors met the urgent need for physicians in rural areas.



Figure 8 Barefoot doctor, in rural Chinese area, 1968

During Deng Xiaoping's period

Several years after Deng Xiaoping took power in the People's Republic of China, he

established a one-child policy to limit population growth among the urban, Han Chinese (Figure 9). By reducing the population and the increasing of the quality of people's lives, hospitals demanded improved birth services. The old traditions of birth were reconsidered as important and respected again.



Figure 9 One-Child Policy posters, 1970s-1980s

From 1990s to present

From 1990, China had the most dramatic changes in childbirth. Since the early 1990s, many birthing hospitals were built by foreign medicine companies and after 2000 many birthing hospitals in China began to introduce birthing techniques from abroad. All provided more places and methods for women to choose for their delivery. Lamaze was introduced in 2002. On March 25th, 2005 in Shanghai, the first woman in China gave birth using the deep-water immersion method, and it was later adopted by other cities (Figure 10). However, traditional childbirth still prevails in China. Mothers continue a one-month rest after delivery, but new mothers can choose go to “yue zi zhong xin” (月子中心) to get their one-month rest with their baby, instead of staying home as traditional Chinese women did in the past. Moreover, some newly developed taboos appeared along

with the new science and technology. Today, once a woman is pregnant, she has only a limited time to browse the Internet, since the Chinese believe that radiation from a computer's monitor is harmful for the unborn baby.



Figure 10 Water birthing room hospital, Guangzhou 2007

Midwives have become popular again. However, they are different than the midwives found in the United States. They are privately-hired nurses, who provide one-on-one care during labor. Chinese call them “导乐,” which means “lead to happiness” to indicate their support both physically and mentally (Figure 11).



Figure 11 Daole in China, Shengzheng

3.1.2 Studies on acceptance of One-Child Policy in Shanghai

The One-Child Policy

After the Communist Revolution, the People's Republic of China population increased 80 percent between 1950 and 1980. In the mid-1950s, China's total fertility rate exceeded six children per woman (United Nations, 2004). A well-publicized Chinese estimate at the time argued that, if the fertility rate stayed at three per family, China's population would be 4.26 billion by 2080, "almost equal to the total [1980] population of the entire world," (Greenhalgh, 2003, p. 181). To reduce the country's rapid population growth, in 1979-1980, Deng Xiaoping introduced the One-Child Policy among the urban and surrounding areas in China. The One-Child Policy extended to be one child per couple.

The One-Child Policy in Shanghai

According to Nie and Wyman (2005), this policy generated little controversy in Shanghai in both older and younger generations. The older generation, who was approximately at the reproductive age at the time the One-Child Policy was introduced, claimed there were four main factors which lead to an easier acceptance of the One-Child Policy: 1) they felt national responsibility about the perceived population growth. 2) To establish gender equity during the Mao era meant women spent less time at home and could go outside the home to work or receive education, women often found it impossible to have many children. 3) For most Shanghai workers, obeying the One-Child Policy was an ideal economical choice. Families were given an extra five yuan as a bonus (about 74 cents) per month (back then, five yuan could buy meals for 10 days) by limiting the

family to one child, which was a big deal. 4) The families believed they understood the reasons the policy was brought into force. Shanghai, like other Chinese cities, had hardly recovered from political upheaval (Cultural Revolution, where the country was terrorized mainly by students called Red Guards). Thus, the Chinese people did not think having one child was a problem. Most families didn't want too many children. One of the participants in Nie and Wyman's study, witnessed her father be denounced by the Red Guards. She described her fear of potential recklessness: "What if they rise up against us after they grow up?" (Nie & Wyman, 2005, p. 318).

The younger generation reported they were willing to accept this policy because 1) it was natural for them and it is what their parents and the older generation around them did. 2) They did not have a problem growing up without sisters and brothers. The One-Child Policy was the only way for them and those around them. 3) Shanghai has a history of exploring new ideas and trends from Western cultures. Now, with foreign magazines, television shows, and usage of the Internet becoming increasingly popular, the singletons, particularly females, were encouraged to consider their own life values and consider having babies as a choice not a necessity (Nie & Wyman, 2005).

At the time the One-Child Policy was established, there were no other options discussed. This was met with strong opposition from the peasantry in China and was also considered controversial by the international community as being severe infraction on human rights. However, most people believed they understood the policy and "with much else to worry and complain about, the One-Child Policy roused little controversy in Shanghai," (Nie & Wyman, 2005, p. 333).

A result of the One-Child Policy was changed young Chinese couples' attitudes towards childbirthing experiences. Now, most Chinese women see childbirth as a “once in a lifetime” experience (Satterfield & Huang, 2007).

3.1.3 Physical, emotional, and cognitive challenges in early pregnancy

A full pregnancy normally takes 40 weeks, understanding physical, emotional, and cognitive challenges in early pregnancy are essential for this study because of the following two reasons: 1) expectant mothers usually choose a childbirthing hospital no later than sixteen weeks of pregnancy in Shanghai and 2) according to Kitzinger (1996), most women experience significant physical, emotional, and cognitive changes at early pregnancy (the first sixteen weeks) especially for first time mothers. Satterfield and Huang's (2007) study in Shanghai showed that most childbirthing-related experiences reported by people who delivered babies in Shanghai were largely based on emotional situations (Satterfield & Huang, 2007). As noted earlier in this chapter, because of the One-Child Policy, most local expectant mothers in Shanghai are first time mothers. In the next section, the physical, emotional, and cognitive challenges in early pregnancy will be discussed.

Physical changes: disorders during early pregnancy

Usually, several disorders can occur in early pregnancy (first trimester): 1) in week 6, many expectant mothers many begin to feel nauseous in the morning or when they are cooking a meal. It may not go away until the end of week sixteen. 2) At week 7, expectant mothers feel tired very easily. For example, they may begin to feel dizzy or faint when

they stand for a long time. 3) During week 8, most expectant mothers have changes in food and drink preferences. Because of the pregnancy, they may no longer drink alcohol or smoke, which is a very good thing. However, these changes may cause negative emotions. 4) During weeks 9 and 10, many pregnant women may experience noticeable skin changes because of pregnancy hormones. Some women may have streaks or brown spots during this stage (Kitzinger, 1996).

Emotional and cognitive changes in early pregnancy

Many women reported that no matter how much they wanted a baby, they found pregnancy produced conflicting emotions (Kitzinger, 1996). These emotions included: 1) lost self-confidence about motherhood, 2) overwhelmed by being the focal point, 3) worried about stress/disorders of body, and 4) pressures on relationships with spouse/partner. Cognitively, they may also be experiencing concentration or memory lapses.

3.1.4 Findings of maternity studies

Maternity studies indicate that cultural beliefs and their impact on clinical practice are important to the way healthcare services are promoted. In China, pregnancy and the act of giving birth are dependent on Chinese traditions and are also influenced by Western countries. Acceptance of the “One-Child Policy” indicates that for most people who live in Shanghai, especially of the older generations, indicated that they are history minded, show a willingness to follow learned principles, and tend to enjoy available products and services. They see themselves separate from the rural culture and tend to perceive

themselves as “advanced” (Nie and Wyman, 2005). Physical, emotional, and cognitive challenges in early pregnancy show that women are fragile and sensitive during pregnancy. The new taboos established to protect the unborn baby limits the time expectant women can obtain information from the Internet.

3.2 Studies of Culture

3.2.1 Role of Chinese cultural values on consumer satisfaction study

Defining consumer satisfaction

Consumer satisfaction/dissatisfaction has frequently appeared in marketing literature since 1976 as a complex concept. The term, consumer satisfaction and dissatisfaction, is sometimes confused with consumer attitudes. Many researchers agree that consumer satisfaction is analogous to attitude (Miller, 1977; Pfaff, 1977; Oliver, 1977, 1981; Czepiel & Rosenberg, 1977a) for three major reasons. These reasons are 1) consumer satisfaction is more experience-specific than attitude-specific, 2) consumer satisfaction involves post-experience, and 3) satisfaction gives additional insights into attitude. Therefore, consumer satisfaction is not only an attitude, but is a richer concept than attitude (Yau, 1994, pp. 12-13).

No consensus on a definition has been reached since the 1970s. Until now, consumer satisfaction has been interpreted in the following three ways (Figure 12): 1) psychological interpretation, 2) economic interpretation, and 3) sociological interpretation.

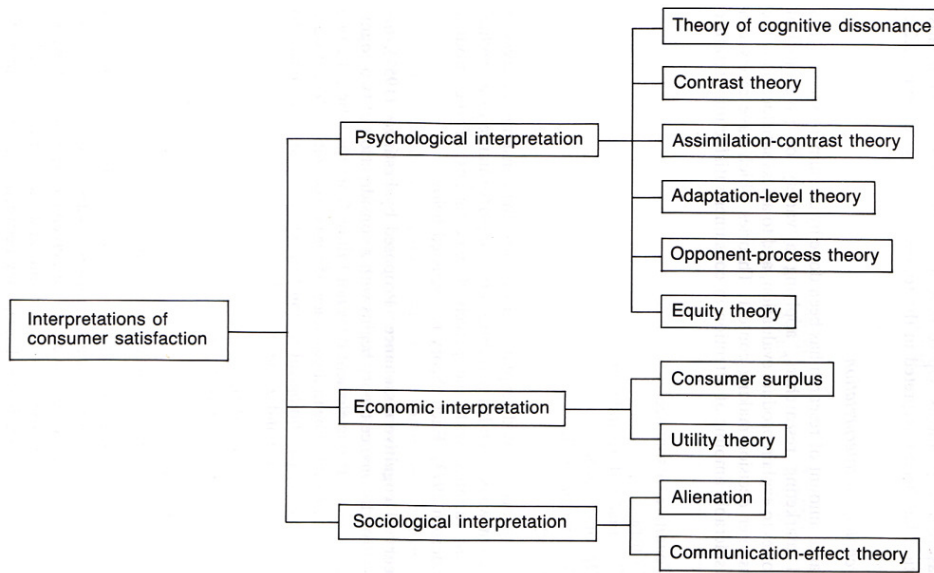


Figure 12 Interpretations of consumer satisfaction/dissatisfaction (Yau, 1994, p. 16)

These interpretations represent variations of conceptualizations and classifications of consumer satisfaction/dissatisfaction from different theories. The focus of consumer satisfaction for this study is the same as defined by Yau in 1994 in his the book, *Consumer Behavior in China*. He defines consumer satisfaction as “a measurable evaluative attitude derived from the disconfirmation of expectations and perceived performance of the product consumed or experienced by the consumer. The level of the expectations and perceived performance are determined by every aspect of the purchase-consumption process,” (Yau, 1994, p. 34).

Culture and cultural values

There are many definitions of culture. Kroeber and Parsons defined culture as “transmitted and created content and patterns of values, ideas, and other symbolic-meaningful systems as factors in the shaping of human behavior and the

artifacts produced through behavior” (Kroeber & Parsons, 1958, p. 583). This definition of culture is used for this study because it emphasizes the relationship between cultural and human behavior. In their definition, Kroeber and Parsons noted that through formal and informal learning, members of a culture learn patterns of beliefs and values through experience in a defined social environment. These beliefs and values are mental images that affect a wide range of attitudes, which influence the way a person is likely to respond in a specific situation. That is to say, the process of learning a given cultural is a “mental programming,” and predetermines a person’s behaviors (Schiffman & Kanuk, 2007).

In a human society, values are retained through the generations as part of its culture. At the individual level, many of these values become incorporated as enduring beliefs, which affirm what is desirable by members of the society. They have an impact on behavior (Nicosia & Mayer, 1976). These values are called cultural values.

Influence of cultural values on consumer behavior

According to Song (2008), many researchers agree that cultural values make a great impact and broadly influence consumers’ behaviors. These influences can be found with activities, such as product choice, impulse buying, and complaining (e.g., Clarke & Soutar, 1982; Kacen & Lee, 2002; Shamdasani & Rook, 1989; Le Claire, 1993). They can also be found with cognitive-related behaviors, including decision-making strategies, information processing, involvement, attitudes, and perceived values (e.g., Chan & Lin, 1992; Hiu et al., 2001; McDonald, 1995; Olshavsky, Moore, & Lim, 1988; Zaichowsky & Sood, 1987; Tan & Farley, 1987; Overby, Gardial, & Woodruff, 2004; Tse, Wong, & Tan, 1988). Therefore, to understand cultural values helps predict consumer acceptance of the

products in the assigned society (Schiffman & Kanuk, 2007).

Dimensions of cultural values

To measure the dimension of cultural values, researchers have created many different models. These models can be divided into two major categories—one is universal and developed for application cross culturally, such as Hofstede's (1980) and Trompenaars' (1993); the second represents a specific culture, such as Nakamura (1960) and Yau's (1994) studies, which concentrated on Chinese cultural values.

Hofstede (1980) and Trompenaars' (1993) models are universal and have been widely used in cross-cultural studies. However, this study adapted the framework of cultural values by Yau (1994) because it focused on the Chinese culture, as well as the relationships between Chinese cultural values and consumer satisfaction.

Role of Chinese cultural values on consumer decision-making

Yau's framework of Chinese cultural values has an impact on many factors, which influence young Chinese couple's decision-making on choosing childbirthing hospitals. The following paragraphs explain the five Chinese cultural values described by Yau (1994): 1) man-nature orientation; 2) man-to-himself orientation; 3) relational orientation; 4) time orientation; and 5) personal-activity orientation.

Man- nature orientation and forgiveness

This orientation can be explained by the locus of the control theory, first initiated by Julian Rotter (1966). He developed a test for measuring internal-external locus of control. The Chinese emphasize an external locus of control, which refers to whether they see themselves as governed by forces beyond their control (Sampson, 1980). The Chinese

believe that eternal has neither change nor is definite; life, death, flourish, and decline are entangled with each other. It is not wise to hold on tightly to that which has been lost and found (Chan, 1963; Wei, 1980). Yuan is an important belief for the Chinese from generation-to-generation. It refers to “as predetermined relations with other things or individuals, which are far beyond one’s control,” (Yau, 1994, p. 69). The Chinese believe there is a powerful external force, and it is either a supernatural force or a sophisticated social law that is too hard to understand by human beings. For example, marriage is predetermined because of this force. “When Yuan exists, it can lead a consumer to find products which he would be very much satisfied,” (Yau, 1994, p. 70). Yau also point out that, Yuan will end, and it will be the time that couple’s must divorce.

Man-to-himself orientation

Man-to-himself orientation includes two values—abasement and situation orientation. In Chinese society, these values are learned from an early age, since the Chinese believe that modesty and self-effacement are important virtues to cultivate people’s mind. In the past a Chinese student would call him/herself “the worthless” before his/her teacher and call him/herself “the unfilial son/daughter” before his/her parents to show abasement (e.g., Yau, 1994). The Chinese are regarded as situation-oriented and pragmatic. The reason is because Chinese children learn by being exposed to many points of views, not only from parents, but also from other adults in the family, such as uncles and aunts. Chinese children learned there is no principle that is right in all circumstances, and compromise in most cases is inevitable (Nakamura, 1964). Chinese are comparatively less dogmatic and tend to be more flexible in following a learned principle.

Relational orientation

Relational orientation consists of four aspects: 1) respect for authority, 2) group-orientation, 3) interdependence, and 4) face (Yau, 1994). The Chinese have a strong respect for authority. It begins early with Confucius' five cardinal relations: minister, father and son, husband and wife, old and young, and between friends (Hchu & Yang, 1972). Teachers in China are supposed to "teach" students instead of guiding students. Group-orientation represents collectivism, one of the nature characteristics of Chinese culture (Le Claire, 1992). This is reflected in the relationships in the Chinese family and their kinship system (Hsu, 1968). That is, most Chinese concentrate on protecting and enhancing their private kinships. Interdependence describes interpersonal relations, which comes from the principle of "doing favors." It signifies one's honor to another. Face is a concept that influences interpersonal relationships in a group (Yau, 1994).

Time orientation

Time orientation includes two aspects—past-time orientation and continuity. Van Oort (1970) claims the Chinese have a strong preference for past-time orientation and they are very history minded. "Ancestor worship and a strong family tradition were both expressions of this preference," (Kluckhohn & Strodtbeck, 1961, p. 14). The Chinese also view continuity as an important aspect because they believe that once a relationship is established, it can hardly be broken. There is a Chinese proverb that says, "if you have been my teacher for a day, I will treat you like my father forever," (Yau, 1994, p. 79).

Personal-activity orientation

Personal-activity orientation represents the characteristics that the Chinese people are taught to be in moral self-control. The predominance of personal-activity orientation is described by Jarvie and Agassi (1969). The highest value in China is to live properly. This is particularly revealed by being polite and obeying rules. Average (zhong yong) has been the most important Chinese cultural value (Chu 1973). According to Confucius, average was without inclination to either side (Legge, 1960). The Chinese are taught to repress primitive passions and impulses.

3.2.2 Market Segmentation

The study of segmentation has been successfully used to assist in the redesign and repositioning of existing products, as well as in the creation of promotional appeals and the selection of the advertising media (Schiffman & Kanuk, 2007). In this section, a list of a variety of market segmentations will be presented and the sociocultural segmentations will be discussed as they apply to this study.

What is market segmentation?

Market segmentation is defined as the process of dividing a potential market into distinct subsets of consumers with a common need or characteristic. And, it is selecting one or more segments to target with a specially designed marketing mix (Schiffman & Kanuk, 2007). There are nine major classes of consumer characteristics regarded as the most common bases for market segmentations: 1) geographic factors, 2) demographic factors, 3) psychological factors, 4) psychographic characteristics, 5) sociocultural

variables, 6) user-related, 7) usage-situation factors, 8) benefit sought, and 9) hybrid forms of segmentation (Schiffman & Kanuk, 2007).

The sociocultural variables of segmentation will be discussed in this study because this consumer characteristic impacts the social class, which also has been emphasized in many Chinese cultural values, such as one aspect of Chinese cultural values of relational orientation.

Criteria for effective targeting of market segments

Schiffman and Kanuk, (2007) suggested that an effective market segment should be identified, such as geography (location), demographics (age, gender, and occupations etc), sufficiency (in terms of size), stability, and accessibility (reachable), in terms of both media and cost. Among their subdivided segments, social class can be used for possible segmentation strategies in the Chinese market for childbirthing hospitals. Sociocultural variables mean sociological (group) and anthropological (cultural) variables are also relevant to this study. Sociocultral variables have been successfully subdivided into segments that include family cycle, social classes, subculture memberships, and cross-cultural affiliation (Schiffman & Kanuk, 2007). Because the concept of social class implies a hierarchy in which individuals in the same class generally have the same degree of status, members of other classes have either a higher or a lower status.

The limelight blue collars in China

The “marketing opportunities” in the blue-collar market is a hot topic since 2004 in China. As one of the largest cities of China, the market of expectant mothers in Shanghai also presents a great opportunity for marketing.

Wang (2008), a Chinese advertising specialist, states in his book, *Brand New China*, while the luxury global brands paint a rosy picture and an accelerated rush into China, Chinese market analysts believe the critical mass of the golden collar has not yet come into existence. With the white-collar families are pinching pennies, blue-collar families, a critical larger mass than white-collar families in China, come to the limelight.

Marketing studies show three blue-collar cross-segment characteristics. They indicate a wide range of consumptions in the expectant mothers' market, which may potentially retrieve consumers from other collar segments. The blue-collar are distinguished into three subsegments: 1) deep blue, which represent the majority of the group; 2) ordinary blue, which are people with closest ties with gray collars; and 3) sharp blue, which consists of the youngest people in the segment. They are well educated (compared to the other two sub segments) and aggressive. The consumption pattern of the sharp blue sub-segment is closest to the end of the white collar (Wang, 2008).

3.2.3 Findings of culture studies

There are five Chinese culture values that have their own implications for building consumer satisfaction. 1) People who value man-nature orientation tend to have low expectations of the product he/she going to consume. Therefore, to obtain an accurate opinion, it is necessary to ask questions associated with both positive and negative experiences, when developing survey questions. 2) People who value man-to-himself orientation show a willingness to follow learned principles and tend to enjoy available products and services. So, integrating these characteristics into designs makes it possible

to pursue consumers who have these values. 3) People who value relational orientation are more likely to have satisfaction with a product derived not solely from one's expectations towards the product, but also from the majority of their family members; Therefore, to ask both young and older generations their opinion is necessary to obtain accurate results. Although expectant mothers and their spouses are people who browse childbirthing hospitals' websites, their parents' attitudes will also influence their decision-making. 4) Many Chinese people value time orientation. Chinese people are very history-minded (Van Oort, 1970). They tend to have great brand loyalty. So, once the reputation of a birthing hospital is built, it will continue to be a selling point for a very long time unless the hospital performs very unsatisfactorily. 5) People who value personal-activity orientation tend not to take public action, such as to complain to manufacturers about their dissatisfaction of products, the same with value of man-nature orientation. This shows the importance of having a survey tool to obtain their opinions since they will not freely offer them without such a mechanism (Yau, 1994).

The limelight blue collars in China indicate that although many people in Shanghai separate themselves from the rural culture and tend to perceive themselves as "advanced," there are still blue collar consumers in Shanghai. The consumption of blue collars covers a wide range of birthing services at different levels. Therefore, having a wide range of participants in the survey is helpful when gathering data that reflects the viewpoints and habits of all consumer groups.

CHAPTER 4. EVALUATION TOOLS

In this chapter evaluation and assessments tools for evaluating childbirthing websites are developed. A discussion of how these assessments can be used for childbirthing website designs is given for each tool.

4.1 Introduction of Evaluation Tools

Evaluation tools used in this study were a combination of qualitative and quantitative assessments, based on the survey results, the qualitative assessment from the literature review, the photographic method of evaluation, and design variables which integrated with the qualitative assessments assembled from the survey's results and literature review.

As a senior designer with five years work experience in the design industry working with the world wide top advertising agency—J Walter Thompson—in Shanghai, this author gained valuable hands-on experiences in many cross-culture projects from start to finish. She also joined the Graphics Design program at Iowa State University, to broaden her horizons with an ability to understand designs from different perspectives. Therefore, using these experiences, this author integrated these assessments into basic design variables incorporated in the combination tool, which was used to evaluate the selected five websites.

4.1.1 The combination tool

The survey tool included two parts: 1) quantitative method and 2) qualitative method. This mix of quantitative and qualitative methods was effective for this study because these two methods complement each other. Using a quantitative method explores topics

where the variable and theory base are unknown; quantitative data collection is generally fast. The quantitative method shows significant problems or differences between variables (Creswell, 2009; Morse, 1991). The quantitative data collected in this study helped measure variations on preferences of childbirthing options among age groups.

Using a qualitative method requires an understanding of the factors and variables that influence the results. It gains insights into attitudes of participants and provides detailed comments dealing with solutions to identified problems (Creswell, 2009). In this study, the qualitative data was collected from the responses of three questions regarding participants' attitudes towards childbirthing hospitals' services. These contributed to forming qualitative assessments as findings of the survey which were used to inform the design recommendations given in this thesis.

4.1.2 Introduction of photographic method

The photographic method is a revolutionary research tool that uses photos to evaluate and analyze designs. In this study, this method assists the researcher to assemble and clarify complicated components and transform them into meaningful and easily interpreted information associated with cultural aspects.

“It is an effective means, of capturing complex or rapid events for evaluation at a later time,” (Malven & Fowles, 1990, p. 1). This consists of five methods: 1) documentation, 2) free analysis, 3) structured analysis, 4) classification and counting, 5) dimensional measurement, and 6) plotting change. The photographic method consists of two stages—one is photo taken and the second is analyzing the photo.

The methods selected to use are classification and counting. There are three ways to use classification and counting analysis method: 1) categorical definitions, 2) mechanical counters, and 3) grids. This tool was used to collect, categorize, and count design elements of five websites in this thesis (Chapter 5). The screen shot of each web page is treated as still photos for analysis.

4.1.3 Integrating defined assessments into design variables by a reliable source

In the last phase of the evaluation, this author integrated the qualitative assessments assembled from the survey's results and literature review into basic design variables to evaluate the selected five websites. This builds on the survey's results and makes the mixed evaluation tool appropriate for the Chinese culture.

4.2 Survey in Shanghai

During summer 2007, this researcher studied 47 male and 73 female residents of Shanghai with regard to their past or current experiences with the childbirthing services at hospitals in Shanghai. Their ages ranged from 22 to 70 years. The participants were asked to provide both qualitative and quantitative data. The qualitative data was collected through responses to open-ended questions. The quantitative data were collected using a Likert-type scale and multiple-choice questions.

The procedures of the survey tool development will be documented below, and the results of the survey will be discussed at the end of this section. The results form one part of the methodology for this thesis.

4.2.1 Profile of participants

The participants are friends (n=20) and relatives (n=29), who have known this researcher for more than 10 years. Other participants were people recommended by these two groups. Thus, there are 71 participants previously unknown to this researcher. People from all three groups were/are expectant mothers or spouses of expectant mothers. They delivered/attended delivery or were going to deliver/ attend delivery at childbirthing hospitals in Shanghai. They are either the “older generation,” who were about reproductive age when the One-Child Policy was first introduced or the “younger generation,” who were about the reproductive age in 2007.

The survey was conducted through phone and email. Among these 120 participants, no one refused to respond. Some participants were contacted more than once to clarify their opinions. The name and personal information from these participants were confidential and removed after completion of the responses.

4.2.2 Survey development

A set of assessments was developed as a baseline for measuring the variables listed below between selected hospitals. The following paragraphs are a list of these assessments and descriptions of their relevancy to Chinese women and men’s lives.

Criteria of developed survey questions

The evaluation criteria include: 1) convenient location; 2) choice of birthing options; 3) reputation of the facility; 4) cost of services; 5) availability of private attending medical care; 6) private pre-birthing rooms; 7) attractive hospital rooms or facilities; 8)

availability of classes on childbirth, infant care, and/or breast feeding; and 9) availability of midwife services.

Convenient location

As in any big city around the world, traffic is very heavy at peak hours in Shanghai. Because of traffic congestion, the Shanghai government limits individual automobile purchases. Therefore, most Chinese families do not have a car. Even families who have cars usually do not recommend pregnant women drive. So, pregnant women must take buses or taxis to doctor's appointments or to the hospital during their pregnancy. Also, in the case of an emergency, most pregnant women prefer to use a hospital near their home. Therefore, the location of the hospital is thought to be an important consideration by many people when they choose a childbirthing hospital.

Choice of birthing options

Shanghai is an important seaport in China. Shanghai's historical significance as an international trade center makes the people of Shanghai very cosmopolitan. They have the reputation of liking to experiment with new things. Also, there are a lot of international people who live in Shanghai. This international audience has introduced a variety of foreign birthing methods to the area. Moreover, based on cultural influences from the West that go back to the 18th century, the people of Shanghai have always been attracted to imported products and ideas. Therefore, more and more young couples are interested in experiencing different methods of childbirth. In fact, using different birthing methods has become a fashion trend among young couples today.

The reputation of the facility

An important reason for the people of Shanghai to choose a specific birthing hospital is trust. People in Shanghai are considered to be the most particular by other Chinese people. When making decisions, such as those for choosing a birthing hospital, it has been said, “they dig before they make dictions.” For these people, the recommendation of a birthing hospital from friends or relatives who have experience with that facility is tremendously valuable.

Cost of services

Twenty years ago, the cost of childbirth was covered by health insurance. So therefore, people in Shanghai seldom thought about the cost of childbirth. But today, in order to increase their popularity and profitability, more and more hospitals provide extra options for childbirth that are not included in health insurance. With the development of a free market economy, the average income of young couples in Shanghai has increased, giving more and more people the ability to afford these extra costs. Moreover, although they can have more children, many young couples prefer to have only one child, thus making the birthing experience one of the biggest events in their lives. Because of this, most of them are willing to spend more money on their childbirth experience. Therefore, the costs of these extra experiences will be of high interest to them.

Private pre-birthing rooms

Because Shanghai is a big city with more than 18 million people, people often live in crowded conditions. Individuals seldom have privacy. More and more, young people in Shanghai value privacy more than they did twenty years ago. Therefore, hospitals, which

provide private rooms have become a very popular childbirth option.

Hospital rooms or facilities

Women in Shanghai were the first group in China to be influenced by the West. Because of this, they care about details. When they are pregnant, they tend to become more sensitive and emotional; and most of them believe a pretty or attractive childbirth environment will definitely help them relax during the birth.

The availability of classes on childbirth, infant care, and/or breast feeding

Most pregnant women in Shanghai are first time moms. Although they can obtain information from older women who have children, professional training still seems important for them because they are often well-educated. They understand how professional training will benefit them. Moreover, most pregnant women in Shanghai work and have active social lives. They already receive benefits from the community. They know the importance of experience from other pregnant women. They believe classes for pregnant women will absolutely give them a better chance to receive this valuable information.

The availability of midwife services

While it is popular in the West, the concept of the midwife is imported to China. However, people in Shanghai still think that imported products are the highest quality. Senior nurses in Shanghai, who have medical backgrounds, can become midwives. In Chinese, the midwife means: “Daole,” which translates to “a guide to happiness.” It is believed that midwives can reduce the pain experienced during delivery.

Hospitals and birth option information

Because of limited budgets and lack of awareness with regard to self-promotion, many childbirthing hospitals have no websites or customer service information available to the public. Thus, only fourteen hospitals' childbirthing-related services and information were collected during 2007. The participants' opinions on the availability of services at these hospitals were asked in the survey in an attempt to discover whether or not options opinions influenced people to choose a specific hospital or childbirthing facility.

Figure 13 shows each hospital and its set of features. Data was collected through phone interviews of hospital officials and through materials published by the hospitals advertising their services.

		A convenient location	The opportunity to choose from a variety of birthing options	The reputation of the facility* ¹ (1-4)	The cost of services* ² (1-5)	The availability of private attending medical care	Private pre-birthing rooms	Attractive hospital rooms or facilities	The availability of classes* ³	The availability of midwife services	
District hospitals		★	★	2	1				★	★	
		★	★					★	★	★	
		★	★					★		★	
		★	★					★		★	
Municipal hospitals	Childbirth only		★	4	4	★	★		★	★	
			★						★	★	
			★						★	★	
	Normal		★	1	2						★
Composite hospitals			★	2	3				★	★	
International hospitals	Special outpatient services		★	2	3		★	★		★	
			★	3	5	★	★	★	★	★	
			★								

*1: 4- Very Good, 3- Good, 2- Average, 1- Soso
 *2: 5- Above 50,000 RMB, 4- Above 40,000 RMB, 3- Above 25,000 RMB, 2- Around 6,000 RMB, 1- Around 5,000 RMB
 *3: Classes such as child birth, infant care, and breast feeding

Figure 13 Childbirthing Hospitals and their set of features

4.2.3 Survey instrument

Questions to collect quantitative data

The primary research instrument was the survey document. It began with some basic demographic questions:

- 1) What is your age?
- 2) What was your age at the time of your baby's birth?
- 3) What is your highest level of education?
- 4) What is/was your occupation?
- 5) What year was your baby born?
- 6) What is the name of the hospital where your child was born?

The demographic questions were important for this study because they made it easy for this researcher to sort responses for analysis. The demographic information included important factors that affect the results of this study.

The second part includes two set of questions. They were multiple-choice questions where the participants checked one of four answers. One multiple-choice question allowed for checking "all that apply." These questions were important because they revealed how significant the childbirthing experience for the participants and their sources. Their responses assisted this author to give recommendations of the type of media the hospitals might consider to attract potential consumers.

The first set of questions was designed to discover the importance of the birth of participants' child when compared to other life experiences, such as wedding or graduation:

☐ The most important life experience.

☐ A very important life experience, similar to a wedding or graduation.

☐ Important but not more than a wedding or graduation.

☐ Less important than a wedding or graduation.

The second set of questions was designed to elicit how the participants learned about the hospital they used for their child's birth (choose all that apply):

☐ Friends or family recommended it.

☐ Advertisement in newspaper or on a billboard.

☐ Advertising mailed.

☐ Internet advertising or search.

☐ Previous experience with that hospital.

Other, please specify: _____

Following the multiple-choice questions dealt with factors influencing participants choice of a specific hospital or childbirthing facility. The information solicited from part two was very important because it reveals their attitudes. Also, a comparison of the qualitative data towards attitude was a critical part of this study.

The following two sets of questions used a Likert-type scale structure. The Likert-type scale section of the survey document asked the participants to rate these questions on a scale from 1 – 5: 1 = Not important at all, 2 = Not important, 3 = Uncertain, 4 = Important, and 5 = Very Important.

The first set of the questions was designed to determine how important the following facilities/issues were in choosing the participants' birthing hospital:

- 1) Lamaze.
- 2) Provided Classes for Breast Feeding.
- 3) Provided Classes for Infant Care.
- 4) Provided Classes for Infant CPR.
- 5) Opportunity to Choose a Type of Birth Process such as Natural Childbirth or Cesarean.
- 6) Quality of the Medical Staff—Doctors and Nurses.

The second set of questions was designed to discover the importance of the following birthing experience features that influenced participants' selection of a specific hospital or childbirthing facility:

- 1) Water Birth.
- 2) Cesarean Section.
- 3) Private Room.
- 4) Beautiful Rooms and Facilities.
- 5) Private Attending Doctors and/or Nurses.
- 6) Special Gifts for the Parents and Baby.
- 7) Family Can Attend Birth.
- 8) Reasonable Cost.
- 9) Close Distance to Home.
- 10) Close Distance to Friends or Family.
- 11) Good Reputation.

Questions to collect qualitative data

The last part of the survey was three open-ended questions. These questions were very helpful in obtaining opinions and suggestions on how to satisfy expectant mothers, their spouses, and families. It was collected to determine if a Kansei method could be developed to assess sensory, behavioral, and emotional aspects of childbirth experience.

These three questions are:

- 1) Did any things about your hospital stay make you feel uncomfortable or dissatisfied?
- 2) What do you expect the doctor or nurse to do for you to make your birth experience highly successful?
- 3) Did any things about your hospital stay make you feel comfortable or satisfied?

4.2.4 Procedures

Before the survey was sent to participants, it was translated into Chinese by a native speaker who is currently a Doctor of Philosophy student at Iowa State University and capable of the task. The quantitative responses received from the survey, multiple-choice and Likert-type scales were typed into a Microsoft Excel spreadsheet to sort and analyze those participants who indicated that they had positive or negative childbirthing experience.

The qualitative responses were translated into English by the same translator and typed in a Microsoft Word document to verify whether or not the words related to sensory, behavioral, and emotional aspects appeared more than once.

4.2.5 Discussion

Quantitative analysis is used to analyze those respondents who indicated they had either a positive or negative childbirth experience. This next section examines the data to determine if any significant factors caused negative or positive childbirth experiences and if there were any significant differences in the results from the different groups of people in terms of gender, age, education level, and type of hospitals they experienced. Among 120 participants, fifty-one people indicated they had a positive childbirth experience and forty-seven people reported negative childbirth experiences.

Data collection and analysis on positive childbirth experiences

Fifty-one people indicated they had a positive childbirth experience. Of these respondents, 63% were women and 37% were men. Thirty percent of the people who reported a positive experience were between ages 30 and 35, 12% were between ages 25 and 29, 14% were between ages 36 and 44. The remaining 45% were over age 45 (Table 1). A majority of the respondents, 76%, indicated they were between ages 25 and 29 when their child was born. A majority of the respondents, 45%, had a high school education. An additional 39% indicated they had at least one college degree (Table 2).

Table 1 Positive birthing experience age distribution

Age	Number	Percentage
25-26	6	11%
30-35	15	30%
36-40	7	14%
Over 45	23	45%

Table 2 Positive birthing experience education distribution

Education	Number	Percentage
College and Above	20	39%
High School	23	45%
Lower than High School	8	16%

Qualitative responses were analyzed to indicate what constitutes a positive experience. Through these qualitative responses, 41 people indicated they had a positive childbirth experience. The following five assessments measure was used to indicate positive experiences:

- 1) Staff is attentive to patient's needs
- 2) A beautiful facility and a nice environment & good service
- 3) Good attitude exhibited by the staff
- 4) Physical comfort
 - Infant care classes
 - Basic knowledge of childbirth and delivery
- 5) Satisfied with professional and medical treatment

From these feature assessment measures, 22% of the respondents indicated the desire to be in a beautiful facility with a nice environment and good service as the highest measure of a positive experience. A good attitude for staff was also highly valued by 20% of the respondents. Of the other assessment measures, a staff that was attentive to patient needs was indicated by 18% of the respondents, physical comforts/infant care classes/basic knowledge of delivery was indicated by 14% of the respondents, and

satisfied with professional and medical treatment was indicated by 8% of the respondents (Table 3).

Table 3 Positive birthing experience five assessment measures distribution

Five Assessment	Number	Percentages
1) Staff is attentive to patient's needs	9	18%
2) A beautiful facility and a nice environment & good service	11	22%
3) Good attitude exhibited by The staff member	10	20%
4) Physical comfort - Infant care classes - Basic knowledge of childbirth and delivery	7	14%
5) Satisfied with professional and medical treatment	4	8%
None of Above	11	18%

Specific qualitative responses that demonstrate aspects of the five quality assessment measures include the following.

In response to the question, “What do you expect the doctor or nurse to do for you to make your birth experience highly successful?,” the following responses were given:

A female, age 30-35, said, “Doctors should introduce general knowledge and explain the disadvantages of the delivery method that I chose and the possible dangers.”

A female, age 30-35, said, “Before delivery, based on the individual situation, doctors should introduce general knowledge and the advantages and disadvantages of the delivery method and how to deal with it. Usually doctors do not introduce that kind of information. Most pregnant woman did their own research online in order to learn about the delivery process.”

In response to the question, “Did any things about your hospital make you feel comfortable or satisfied?” the following response was given:

A female, age 36-44, said, “The nurse was kind and professional. The music that played during the delivery made me feel relaxed.”

Data collection and analysis on negative childbirth experience

Qualitative assessments were also used to evaluate negative responses. Forty-seven negative childbirth experiences were received, 19 from males and 28 from females. The largest number of negative experiences, 38%, came from respondents over age 50. The lowest percentage of negative experiences came from the 25–29 age group, 13%. The following is an example of the type of negative childbirth experiences recorded:

In response to the question, “Did any things about your hospital make you feel uncomfortable or dissatisfied?” the following responses were given:

A male, age 25-29, said, “My wife and I spent a lot of time waiting in line.”

A female, age 30-35, said, “I waited nine days after I applied for a private room.”

A female, age 30-35, said, “The caesarean wound is ugly.”

A male, age 30-35, said, “There were only nurses, no doctors, during the delivery. My wife could not get good rest because there was no privacy. There were three women in the room.”

Summary of the discussion

Based on the results of a t-test to analyze the indicators of a positive childbirth experience, respondents indicated that having a private doctor attending to the birth was the most important measure of a positive experience. Other indicators of a positive

childbirth experience were the availability of infant care classes and infant CPR classes, as well as the cost of the care facility and the distance to their home and their family.

Most of the qualitative responses given were largely based on emotional or social situations. People from all generations experienced both positive and negative childbirth experiences. In some cases they were not satisfied with hospital service, but at the same time they appreciated the fact the hospital did something to keep them emotionally satisfied. The basic indication of this research is that unsatisfactory service can be forgiven as long as the childbirth experience can meet their emotional needs. Some respondents offered both positive and negative responses to their childbirth experience. Some examples of this include the following:

A female respondent: age: 36-44 said both, “the experience made me scared,” and “the environment was good because the mom and baby could stay in the same room.”

A female respondent: age: 30-35 said both, “the wound left by the Cesarean looks bad,” and “the nurses’ attitudes and experiences are good.”

A female respondent: age: 25-29 said both, “too many people have to share one room making it hard to get rest,” and “the direction and assistance that I received helped a lot.”

Most negative responses involve negative attitudes or emotions. Respondents over the age of 50, both male and female, gave more negative responses than their younger counterparts. Females also gave more negative experience responses than males.

Respondents over age 50, both men and women, had a lower level of involvement in the childbirth process. Men from this generation had to receive information about the childbirth from their wives. In contrast, the younger generation of men was willing and

able to attend the whole birth experience. They have a high level of involvement in the whole delivery process from selecting the childbirth facility through the childbirth process.

Women over age 50 wanted to learn how to collaborate in the process. Women of younger generations would like to learn about the advantages and risks associated with birth experiences so that they can make more informed decisions. Younger women are not only more aware of the medical risks of childbirth, but are also more aware of such things as the security issues of childbirth and the issues of confidential and personal data.

The social and economic changes that have taken place during the period between 1979 and 2007 can also be seen in the responses of these two generations. Respondents from older generations have more negative comments than their younger counterparts. During previous generations, almost all people lived in big cities and had the same salaries. Their society did not provide many choices in service. But, people are different and they love options. So, the older generations as a group offered more complaints about their lack of options. Due to improved developments in the economy, today's society provides more options with regard to services; therefore, the younger generations have more choices in their birth experiences.

Although the older generations are not a group that childbirth hospitals will pursue, they do influence how young people choose hospitals. Advice from family in decision-making is important to Chinese people (Satterfield & Huang, 2007).

4.2.6 Findings of the survey's results

Two set of findings are discussed in this section, one is the quantitative and qualitative assessments from the survey results, the other is possible design implications based on the survey results.

Quantitative and qualitative assessments from the survey's results

Both quantitative and qualitative assessments are from the analysis of the survey responses to determine what might indicate a positive childbirth experience. The quantitative assessments are based on the results of a t-test. These assessments are listed below in a hierarchy order (from high most important assessment of a positive childbirthing experience to a least important assessment):

- 1) Desire of having a private doctor attending the birth.
- 2) Desire of the availability of infant care classes and infant CPR classes.
- 3) Consideration about the care facility's costs and the distance to their home and their family.

These five qualitative assessments are based on the responses to the survey's questions. They are listed below in a hierarchy order (from high most important assessment of a positive childbirthing experience to a least important assessment):

- 1) Desire of a beautiful facility and a nice environment with good service.
- 2) Desire of good attitude exhibited by the staff.
- 3) Desire of staff member as attentive to patient's needs.
- 4) Desire of physical comfort.

- Infant care classes

- Basic knowledge of childbirth and delivery

5) Satisfied with professional and medical treatment.

Possible design implications of the survey's results

Possible design implications from the survey include the desire to have a private doctor and to learn issues of childbirth. These unique cultural features of Shanghai can be met by selecting the correct images to show this information and by emphasizing this information in the layout. The desire to have a private doctor, good service, and learning issues about childbirth are all high ranking factors associated with positive birthing experiences. These factors also indicate that the survey participants are anxious to adopt features associated with Western childbirth services. As previously mentioned, people, who live in Shanghai, have long history of contact with the West.

Possible design implications for the desire to have a beautiful facility, a nice environment, and physical comfort can be achieved by selecting images that visually, psychologically, and culturally please viewers by depicting these qualities. These factors indicate that participants are anxious to receive a high level of comfort in the childbirth experience.

Possible design implications to achieve the desire for survey participants to be met with a good attitude exhibited by staff members who are attentive to patient's needs can be addressed by selecting appropriate typefaces, type size, and images.

4.2.7 Limitations of the survey

The limitation of this survey is the size of the sample, due to limited time and the

tight budget of this study. In the future, it would be important to have more individuals and a more random sampling to participate in the study.

4.3 Elaboration of the Visual Elements and Their Potential Impact on Clarification of the Information on Website Layout Design

Table 4 shows the visual content observed on five childbirthing website homepages, necessary for analysis and establishing guidelines for the website layout design. Moreover, as previously mentioned, the findings of reviewed literature and the survey results can be addressed graphically by using these visual elements appropriately. This figure provides a list of important information for this researcher to discuss. The check list is arranged in no hierarchical order and the five selected hospitals are named from “1 to 5,” listed in the far left-hand column. The common visual elements of the websites are listed on the top line. This figure represents the website’s certain visual elements (represented by “x”) or no certain visual elements (represented by “--”). The elements/principles are selected to discuss including color, typeface, image, use of negative and positive space, and use of hierarchy.

Table 4 A collective inventory of visual elements of five selected website

	color	typeface	image	text	negative & positive space	symbol	hierarchy
1	x	x	x	x	x	--	--
2	x	x	x	x	x	x	--
3	x	x	x	x	x	x	--
4	x	x	x	--	x	x	--
5	x	x	x	x	x	x	--

1= Yangpu District Maternity and Child Health Hospital.

2= International Peace Maternity Child Health Hospital of the China Welfare Institute.

3= Shanghai Second Medical University Affiliated Xinhua Hospital.

4= Shanghai Changing Maternity and Child Health Hospital. 5= Pathway Health.

Before evaluation, the selected visual elements explained in last paragraph—including color, typeface, and image—must be identified and evaluated for the most appropriate implementation to improve information clarification and to support Chinese cultural values. The usage of negative and positive space and hierarchy are the principles used to clarify information in a layout. In the following paragraphs these principles were also identified and evaluated for developing a successfully website layout to appropriately and effectively present information to Chinese expectant Chinese mothers or potentially expectant mothers and their families.

4.3.1 Color

Color variables are infinite. This discussion focuses on the meaning of color. Color has a significant impact on revealing culture and positive emotions.

Color and culture

The meaning of color is complex; a single color could have very different meanings in different cultures, “even the colors of nature are subject to original context” (Peterson, 2000, p. 6). Moreover, each culture has multiple layers of meaning. Some traditional colors may convey multiple meanings nowadays, as Peterson claimed in his book—*Global graphics: color*. Even “the farthest corners of the world are explored by the visual Esperanto of multinational marketing and communication. Coca-Cola red, Kodak yellow, and IBM blue are recognizable,” (Peterson, 2000, p. 6). The significance of individual color in Chinese culture continues to change over the years, but the following are based on this researcher’s observations as a Chinese designer and literature

from color specialists Peterson (2000), design professional Millman (2008), and Arntson (1998).

Hierarchy in traditional Chinese color symbolism

As noted previously, with the impact of globalization in China, some colors convey multiple meanings today. However, the influences on traditional Chinese color symbolism still play an important role in Chinese people's perceptions towards colors. "The elements of nature, points of the compass, regions of the country and the seasons all have corresponding colors in traditional Chinese color symbolism" (Peterson, 2000, p. 149). According to Peterson, how and when the five elements' colors are used is determined by the hierarchy of each element's attributes. Fire (red) overcomes metal (white), metal overcomes wood (blue/green), wood overcomes earth (yellow), and earth overcomes fire (red).

Red, yellow, and golden represent authorities

Authorities reflect one of the Chinese culture values—man-to-self. Red, yellow and gold are three major colors that represent authority in China. Pantone 185 PC is the accurate red that represents authority in China (Figure 14). It associated with Communist China; the motif of the People's Republic of China's flag is red and represents authority. Pantone 108 PC and Pantone 117 PC are the accurate yellow and gold colors that represent authority in China (Figures 15 and 16). Yellow and gold are used by many Imperial families before the People's Republic of China was established. They echo power and royalty.



Figure 14 (Left) The accurate red that represents authorities in China

Figure 15 (Right) The accurate yellow that represents authorities in China



Figure 16 The accurate gold that represents authorities in China

Golden and blue represent status

Gold of a deeper darker hue is favored throughout Asia, especially China. Since it is widely used on decorative objects of Imperial families' palaces and residences, it is considered to represent wealth and status. Pantone 118 PC is the accurate gold that

represents status in China (Figure 17). In the past few decades, blue was widely used in manual labors' uniforms in China, along with spreading of the term “blue collar.”

Although, blue jeans are common for casual dress, blue represents low social status

Pantone 3005 PC is the accurate blue that represents status in China (Figure 18) (Peterson, 2000).

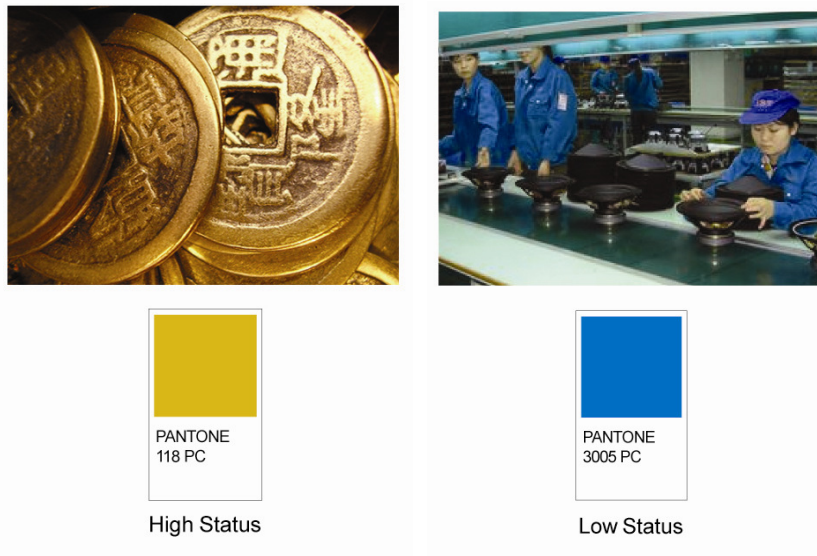


Figure 17 (Left) The accurate gold that represents status in China

Figure 18 (Right) The accurate blue that represents status in China

White represents pure

According to Peterson, white has been considered a traditional color associated with death and mourning in China. Along with an increasing connection with Western cultures, white is now also seen as a symbolic color of purity (i.e., white is used in Western weddings).

Red and orange represent joyful

Peterson states, “along with being the color symbol of fire, red also means good luck,

good fortune, joy, and fertility,” (Peterson, 2000, p. 148). Wedding is called the red ceremony in China. It is one of the biggest and most important life events for the Chinese. Red is the traditional color for a wedding dress to wish new couples joy in their new lives. Red is also associated with Chinese New Year: red paper envelopes containing money are traditional gifts to children to wish them good fortune in the New Year. Pantone 1797 PC is the accurate red that represents good luck in China (Figure 19). The yellowish orange of the harvest represents a good year with adequate grain in China. It associates with a feeling of joy. Pantone 137 C is the accurate orange that represents joy in China (Figure 20).



Figure 19 (Left) The accurate red that represents good luck, good fortune, joy, and fertility in China

Figure 20 (Right) The accurate orange that represents joy in China

Green represents valuable, desirable, and vital

Along with being the symbol of wood, it represents positive meanings for plants, crops, and spring. It is the color of birth and youth as well. Green is also seen as a symbol

for value and desirability since it is closely tied to jade (Peterson, 2000). Pantone 322 PC is the accurate green that represents valuable, desirable, and vital in China (Figure 21).



Figure 21 The accurate green that represents valuable, desirable and vital in China

Blue implicates feminine

Blue is a symbol for wood. There are no significant spiritual or mystical associations with blue in Chinese traditions. However, blue is the color of water (the colors of nature) and water is considered to be a feminine aspect of nature (Peterson, 2000). Therefore, blue is not only a male color in China, but also associated with females.

Color and emotion

Color can be an effective tool to influence webpage visitors' first impressions of the site. It is used to set the mood and tone of a site. "Colors have the power to evoke specific emotional responses in the viewer—some personal, and some more universal," (Arntson, 1998, p. 179). Red, yellow, and their variations are referred to as warm colors. In China, because these colors associate with scenes of family reunions on holidays, ceremonies

that celebrate weddings, birthdays; they are also associated with a good future through images such as the scenes of the sunrise (Figure 22). Green and blue are considered cool colors. Generally speaking, warm colors stimulate and cool colors relax most people. Warm colors are emotional approaching and provide a feeling of welcome; whereas, cool colors are rational and provide a feeling of distance. These cool colors represent authority in China. They are used in the army uniforms and appear on the clay figures of warriors and horses buried with the dead. The sense of the Forbidden City in a blue hue gives a feeling of power, dignity, and distance (Figure 23).



Figure 22 Warm colors provide a feeling of welcome



Figure 23 Cool colors give a feeling of distance

Color and psychology

Arntson (1998) claimed that the perception of color is associated with culture, as well as with the psychology of the audience. He pointed out that the profile of the audience and its color preferences must be taken into consideration when the color choice is made and gives recommendations for people from various age groups.

In general, youth prefer bright colors that signal urgency and excitement, such as red, orange, yellow, green, blue, and white. Color preferences change as people grow older. Colors that older generations prefer are associated with restraint and dignity (Arntson, 1998).

Consider legibility

Colors used on a website are difficult to control, since users' monitors are different. The physical and psychological situations, which evoke expectant mothers' emotions, are different. However, there are rules that website developers can follow. 1) It is important to avoid using colors with strong contrast (dark and bright, complementary colors) and instead, use soft, harmony colors to provide a feeling of calm and relaxation. Websites with highly contrasting are difficult for many people's eyes. Their eyes can tire very easily and quickly. It is even more difficult for an expectant mother, as mentioned in Chapter 3, because women are very sensitive and emotional during early pregnancy. There is a greater chance they feel sick or fatigued by looking at these types of colors on the monitor. 2) The usage of color regarding readability should be considered as well. Figure 24 (Favre & November, 1979, P. 50) presents a ranked list of the legibility of colored letters on colored backgrounds.

black on yellow	1	black on red	16
yellow on black	2	blue on orange	17
green on white	3	yellow on green	18
red on white	4	blue on red	19
black on white	5	yellow on red	20
white on blue	6	white on red	21
blue on yellow	7	red on black	22
blue on white	8	white on orange	23
white on black	9	black on green	24
green on yellow	10	orange on white	25
black on orange	11	orange on blue	26
red on yellow	12	yellow on orange	27
orange on black	13	red on orange	28
yellow on blue	14	red on green	29
white on green	15	green on orange	30

Figure 24 Advantage of using certain colors letter on certain background
 First color represents letter & second color represents background
 1=represents best legibility, 30 = worst legibility

4.3.2 Findings of color study

Color is a powerful tool that helps designers accurately design for the target audience in cross-culture projects. Using appropriate colors that convey cultural meanings can help designers evoke expected feelings within a specific culture. For example, cool colors—such as blue or green—are appropriate and efficient for use in a childbirthing hospital website because the survey results show that a feeling of authority is expected by the target audiences in China.

4.3.3 Typography

Before discussing typography criteria, it is necessary to clarify three things. 1) Only typefaces used in the selected five websites and the aspects that reflected in Chinese characters are discussed in this section, because unlike English, which has only 26 letters in its alphabet, there are over 80,000 Chinese characters. Of these characters, 2500 are

frequently used and the criterion for literacy is the ability to recognize 2000 or more characters. This study will focus on several aspects of how to evaluate Chinese typography for certain purposes. 2) Some criteria used to analyze Chinese typography are based on Western theories of typography. It is appropriate to use western theories to examine Chinese typography in this study because these theories had an influence on the development of graphic design in China, which began with the first design agencies established in Shanghai in the mid-1930s. Although most forms of Chinese typefaces used today are based on Chinese calligraphy, Chinese graphic design pioneers attempted to apply Western typographic theory to Chinese writing in the 1970s. According to Wang (1989), a famous Chinese graphic design historian, “the Chinese sans serif - Hei Ti (black style)—was created on the basis of Western sans serif developments of the time,” (Wang, 1989, p. 12). Nowadays, international travel and the Internet make cross-culture communication more common. Many Chinese unobtrusively and imperceptibly accept the use of western theories on Chinese typography. 3) However, not all typographic criteria assembled in this section are based on Western type studies. Studies on legibility of Chinese characters by Chinese researchers Zhang, Zhang, Xue Liu, and Yu (2007) and the industry experience of this researcher are also considered.

The typefaces, used in the five selected websites, are listed in the matrix below (Table 5). The five selected hospitals are named from “1 to 5,” listed in the far left-hand column. The typefaces used in the websites are listed on the top line. This figure represents certain typefaces used (represented by “x”) or not used (represented by “--”).

Table 5 A collective inventory of typefaces used in the five selected websites

	Zhong Yuan	Zhong Hei	Zong Yi	Xing Kai	Shu Tong	Da Lishu	Cu Yuan	Da Hei	Xiu Ying
1	--	--	x	--	--	--	x	--	--
2	--	x	x	x	x	x	--	--	--
3	--	x	--	x	--	--	--	x	--
4	--	--	x	--	--	--	--	--	x
5	x	x	--	--	--	--	--	--	--

1= Yangpu District Maternity and Child Health Hospital.

2= International Peace Maternity Child Health Hospital of the China Welfare Institute.

3= Shanghai Second Medical University Affiliated Xinhua Hospital.

4= Shanghai Changning Maternity and Child Health Hospital.

5= Pathway Health.

Typography in the West is defined as “applying type in an expressive way to reveal the contact clearly and memorably with the least resistance from the reader (White, 2002).

It includes selecting and arranging type styles, point sizes, line weights, line spacing, character spacing, and word spacing. The aspects that are reflected in Chinese characters are discussed individually below including type styles, point sizes, line weights, and word spacing.

Type style

Both Arntson (1998) and White (2002) agree that understanding the form of a letter is essential before a complex typography idea can be developed. “Type styles often have different expression qualities, depending on their shape,” (Arntson, 1998, p. 47). Same as the type style—transitional, modern, and Sans Serif—arranged by Arntson, the Chinese typeface, Zhong Hei, Da Hei and Zong Yi, contain hard, straight edges and angular corners. They convey rational and professional feelings (Figure 25). By contrast, as with the Old style typeface, Chinese typefaces listed in Figure 26 have graceful curves and

provide feelings of relaxation and sensuality. Typefaces that resemble Chinese calligraphy represent positive feelings in China, including authority, respect, trust, high quality, and good reputation. Many well-known universities, state-owned industries, and government-owned organizations in China use inscriptions written by famous people in their logos to indicate their services, education, and products have good qualities and these qualities are guaranteed by these famous people. These people are leaders in their respective fields (politic, science, education, art etc).

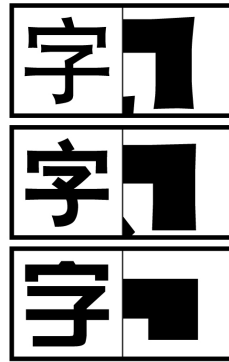


Figure 25 Zhong Hei, Da Hei, and Zong Yi. The typefaces are arranged in order (from top to bottom). The character is displayed on the left-hand column and the details are listed on the right-hand column.

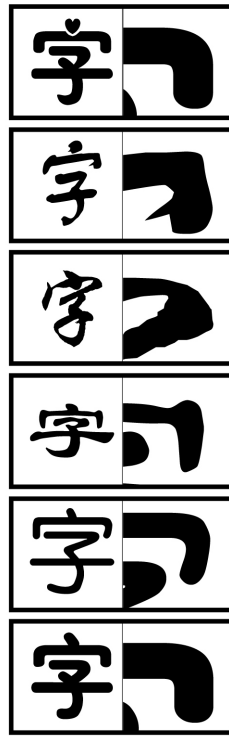


Figure 26 Chinese Typeface Xing Kai, Shu Tong, Da Lishu, Zhong Yuan, Cu yuan, and Xiu Ying. The typefaces are arranged in order (from top to bottom). The character is displayed on the left-hand column and the details are listed on the right-hand column.

Point size

A point is a unit of measurement in size, according to Arntson. Ten-point size is thought of as the smallest legible type. Based on this researcher's many years of working experience and expertise in the design and advertising industries in Shanghai as a senior designer, the smallest legible type of Chinese Characters is 8 to 10 points. However, some 12-point Chinese typefaces look as small as some 11- or 10-point. The size of a 12-point Chinese character “字” is varies when set in the nine Chinese typefaces. For example, a 12-point Xing kai is the same height as a 10-point Zhonghei, and a 12-point Da Lishu is the same height as an 8-point Zhonghei (Figure 27). Their widths are also different, a 12-point Song Tong and Xing Kai are the same width as a 9-point Zhong Hei (Figure 28).

Moreover, the legibility of Chinese characters is also determined by the complicity of the characters' forms. As Zhang, Zhang, Xue Liu, and Yu (2007) point out in the study of *Legibility Variations of Chinese Characters and Implications for Visual Acuity Measurement in Chinese Reading Population* that “the results showed that acuity sizes of Chinese characters increased linearly with their spatial complexity,” (Zhang, Zhang, Xue Liu, & Yu, 2007, p. 2384).

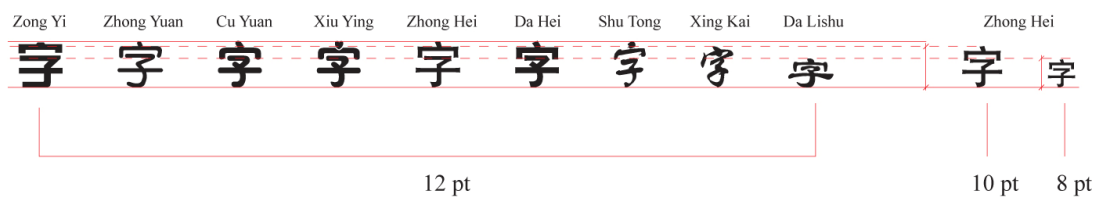


Figure 27 The height of a 12-point Chinese character “字” is varied in nine Chinese typefaces

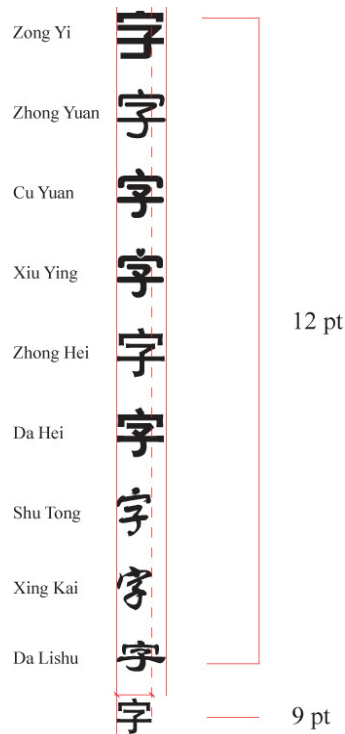


Figure 28 The width of a 12-point Chinese character “字” is varied in nine Chinese typefaces

Point size and emotion

In his book *The Elements of Graphic Design*, White (2002) discusses the idea “listen to type.” He states that when listening to a book recorded on tape, “The reader’s voice changes with the story, helping the listener hear various characters and emotions” (White, 2002, p. 103). Stories told on paper do the same thing. People may feel information written in a big size font is “yelling” and in a small size font is “whispering.” For example, Figures 29 and 30 show a comparison of the same message—Exit—in the same type but different sizes. The “exit” in a small type size on the left-hand side designates to people the exit door location. On the right-hand side, the “exit” in a big type size implies “no admittance” and evokes the feeling of being forced to exit the room.



Figure 29 (Left) The word “Exit” in a small point size

Figure 30 (Right) The word “Exit” in a large point size

Font weight

Font weight refers to the thickness of strokes within a letter (Carter & Day, 1993). Many Western typefaces belong to type families. A family is all the variations of a particular typeface. For example, Helvetica family has a series of variations, based on different line weights, including light condensed, medium condensed, bold condensed, etc

(Arntson, 1998). Different weights of typeface have their own strengths to enhance a message's meaning. Figure 31 shows an example of words written in “heavy” variations of font weight in the Helvetica family. The text's meaning—heavy—decreases from top to bottom because of the decreasing line weight.

heavy
heavy
 heavy
heavy
 heavy
heavy
 heavy
heavy

Figure 31 Words “Heavy” in variations of font weight in the Helvetica family

Not all existing Chinese fonts have type families because of the complicity of its form. Chinese characters have a wide range of spatial complexities; a character may consist of 1 to 52 strokes. However, the theory of using line weight to enhance messages' meaning can be accomplished among different Chinese typefaces. Using fonts of the selected websites as an example, the line weight of nine Chinese typefaces are ranked (Figure 33).

Since the form of Chinese typefaces Shu Tong, Xing kai and Xiu Ying are close to Chinese calligraphy, the font weight is based on the measurement of the most frequently

repeated stroke width of each typeface. Their forms contain many variations of stroke width, even within a character. The Chinese character “体” is selected for measurement because the simplicity of its form and also because it consists of a suitable amount of stroke variations (horizontal, vertical, and curve lines) for the comparison study. “体” is typed into nine typefaces with 20-point size for best visual presentation. Figure 32 shows how the strokes are measured. The width of the red square in the middle represents the Zhong Hei strokes’ width. It is named “x” and used as the basic unit to measure other typefaces’ stroke width. The distance between two closed purple lines on each typeface represents where its width is measured. Each typeface’s stroke weight is presented by the ratio of the width to “x.” The results are presented in Figure 33. The line weight of Zhong Yuan is the lightest among the nine typefaces and the stroke width of Dai Hei is the thickest. Nine fonts are listed in a hierarchy order, Shu Tong, Zhong Yuan, Xing Kai, Da Lishu, Zhong He, Xiu Ying, Cu Yuan, Zong Yi, and Da Hei (from lighter to bolder). In the context of introducing childbirthing hospitals’ services, the feeling of comfort and respect decreases with the increase of stroke width, while the feeling of authority and guidance increases with the stroke width.



Figure 32 A demonstration of how stroke width is measured. The figure is arranged into nine units. Each unit includes four parts, 1) the name of the font is located at top, 2) &3) in the middle of the unit are the font and the purple lines, and 4) the ratio of the width to the “x”, which is listed at the bottom of each unit.



Figure 33 A diagram of nine Chinese fonts in font weight hierarchy order

Word spacing and line spacing

Five types of spacing are often studied in design research, including space between letters, words, lines, paragraphs, and columns. Word spacing and line spacing are selected for discussion because they reflect Chinese typography and also are used by the selected websites.

According to White (2002), the function of word spacing is to “separate word thoughts cleanly while maintaining the integrity of the line,” (White, 2002, p. 115). Spacing should be invisible. The function of word spacing is the same as the spacing between Chinese characters. Not all Chinese characters have their own meanings. Some need to combine with other characters to express a meaning, so too much spacing can cause reading problems, because of the inconsistency of the meaning.

The space between lines must be greater than the word spacing to lead the eye to travel horizontally. Space between lines is wider than space between characters in Chinese as well. Chinese uses line spacing to indicate horizontal or vertical reading. Although most published text in China are arranged horizontally now, the influence of traditional Chinese writing, where text is arranged vertically, still has an impact on how Chinese people read. Text arranged vertically creates emotional reactions, including feelings as elegant, knowledgeable, respectable, and authoritative, because it evokes memories of the calligraphy on Chinese traditional paintings and inscriptions from the Mao era. Figure 34 shows an example of calligraphy on Chinese traditional painting; the space between lines indicates vertical reading and looks elegant to the readers.



Figure 34 Couplets by Wang Wei (701-761)

4.3.4 Findings of typeface study

The choice of typeface helps designers create different a atmosphere for different design work. For example, typefaces with graceful curves provide a feeling of friendliness and comfort, which create a warm and inviting atmosphere for visitors who browse the websites. These type fonts can be used for information that indicates staff members' attentive services such as personal testimonies or information about the caring quality of the facility. On the contrary, typefaces that have sharp angles give a feeling of authority and distance. These face types are best for stating factual information, such as a description of symptoms and treatments.

A typeface indicates how a designer wants the message to be received by manipulated how the size or line weight of fonts are used. To study the Chinese birthing websites, the typefaces with thin line weights can be used to deliver information such as attentive reminders for patients. This will give viewers a feeling of friendliness and

comfort. On the other hand, a typeface with a thick line weight indicates an attempt to be more authoritative. In China, experienced doctors are considered to be an authority. Therefore, it makes sense that the typefaces selected to represent the statements made by doctors use thick line weights since these messages are supposed to be unconditionally accepted by patients. The line spacing should be no wider than the word spacing to avoid misinterpretation of the information by reading the text in a wrong order since Chinese people are accustomed to reading vertically as well as horizontally.

4.3.5 Image usages

“Visuals are quick, efficient, and yet effective in strengthening our capacity to communicate,” (Fan, 2003, p. 1). As mentioned earlier in this chapter, using an appropriate image can help a childbirthing website catch potential consumers’ attention by strengthening desired features. In this section, how image use can help emphasize each factor consumers are seeking is discussed. Examples are also provided to clarify these descriptions. Based upon the quantitative section of the survey, factors that influence expectant mothers and their families’ decision-making are listed below (ranked from high impact to low impact):

- 1) - A beautiful facility and a nice environment
 - Good service
- 2) Good attitude exhibited by the staff
- 3) Staff is attentive to patient’s needs
- 4) Physical comfort

- Infant care classes
 - Basic knowledge of childbirth and delivery
- 5) Satisfied with professional and medical treatment

Beautiful facility and nice environment

The essence of a desire for a nice environment can be explained as a desire of looking for comfort and private surroundings in Shanghai. Figures 4.11 and 4.12 are photos of the same pre-birthing room. The one on the left-hand side (Figure 35) appears bigger than the photo on the right-hand side (Figure 36) because it is shot with a wider angle. However, there is no clue as to whether this is a private space or not. So, showing an image of the outside view of the pre-birthing room is recommended (Figure 37). The image should be displayed on the left-hand side to assist people's understanding in a logical sequence, since most people read from left to right in China.



Figure 35 (Left) An image of pre-birthing room shot from a distance

Figure 36 (Right) An image of a closer shot of a pre-birthing room



Figure 37 (Left) An image of outside view of a pre-birthing room

Figure 38 (Right) An image of pre-birthing room shot from distance

Figures 39 and 40 are the same image with a different cropping. A comparison shows that appropriate cropping of the image on the left-hand side visually increases the space and provides a feeling of comfort. The image on the right-hand side, with a nearly cropped ceiling, makes the viewer feel crowded.



Figure 39 (Left) An example of appropriate cropping of a hospital lobby image

Figure 40 (Right) An example of inappropriate cropping of a hospital lobby image

People, who desire a beautiful facility, expect to see images of visually pleasant objects in a website. To show details (Figure 41 & Figure 42) for these objects is always helpful.



Figure 41 (Left) Details of a birthing center's logo

Figure 42 (Right) Details of a birthing center's logo

Good service

Good services suggest four positive feelings including support, guidance, connection, and respect. These feelings can be evoked by an image or a set of images suggested below.

Portrait of staff member's images

Portrait of a single staff vs. portrait of a group of various staff members

Figures 43, 44, and 45 show three examples of single staff member portrait. All staff members are smiling and looking at the camera, which shows the feeling of connection and respect. The close shot of a staff member in the middle (Figure 44) is the best photo to express a feeling of connection. The image on the far right-hand side (Figure 45) with other staff members and patients standing behind as a background does a good job in showing all four feelings depicting good service.

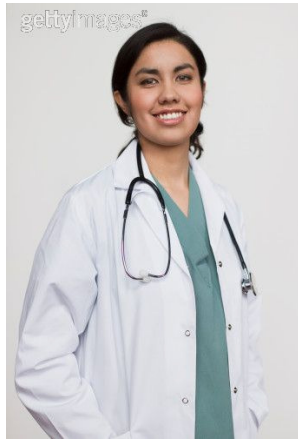


Figure 43 (Left) Staff portrait with clean background



Figure 44 (Middle) Close shot staff portrait with clean background

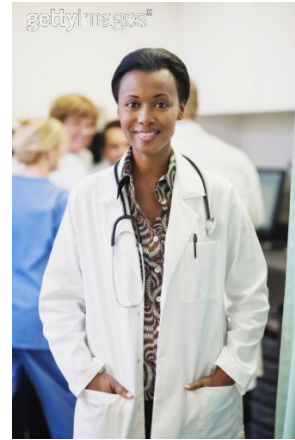


Figure 45 (Right) Staff portrait with other staffs and patients as background

A portrait of multiple staff members (Figures 46) indicates team work. The images with the group of staff members are better than those with a single staff member in terms of a feeling of support during delivery. To achieve a feeling of support in other cultures, additional factors need to be considered. For example, the combination of showing variations of medical staff members in different gender, age, and origin (from local vs from abroad) (Figure 47) must be considered in childbirthing hospital websites in China. As noted in Chapter 3, historically childbirthing is considered a business that men normally were excluded. Nowadays, many expectant mothers would like to be given the option of having a female or male doctor attending their delivery. Moreover, many Western medical techniques are considered high qualities in China and images containing both Western and local medical staff are also considered important.



Figure 46 Portraits of multiple staff members

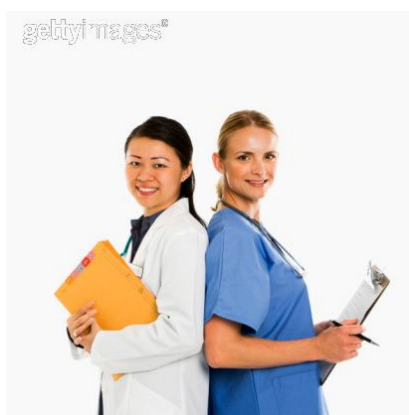


Figure 47 Staff portrait with different Nationalities

Portrayal of foreign staffs

The use of images of foreign patients/staff on a website is a metaphoric representation of the quality of services. In the image on the left-hand side (Figure 48), a Western staff stands in the foreground in focus with two Asian staff seen as an out of focus background indicate the dominance of Western service. Whereas in the image on the right-hand side (Figure 49), a Western staff member and an Asian staff stand side-by-side to indicate that a combination of equally balanced Western and Asian services are provided. The effectiveness of using this type of image to indicate good

service is influenced by the viewers' level of acceptance of the values and ideologies of foreign cultures.



Figure 48 (Left) A portray indicate Western dominant services

Figure 49 (Right) A portray indicate a combination of Western and Asian services

Body gesture of a portray

The three images listed below show body gestures that are not recommended. To a Chinese audience these images suggest carelessness (Figure 50), irresponsibility (Figure 51), and nervousness (Figure 52). The body gesture of the person on the left-hand side (Figure 51) leaning against the wall with arms crossed is a typical gesture used in a situation where someone feels lazy, careless, and is not concentrating on the task at hand. The image in the middle (Figure 52) shows a person wearing a staff uniform and staring outside in front of a window. His arms are crossed and one hand supports his chin. This body gesture indicates meditation, but also can be read as someone who is not on duty. The person in the image on the right-hand side (Figure 53) stands with 10 fingers crossed on a table in front of her. Although she is looking at the camera, she does not seem confident because her hand gesture symbolizes nervousness.

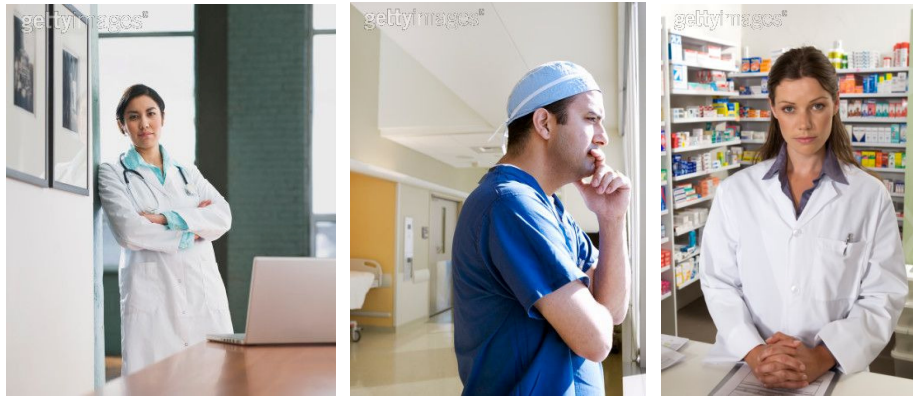


Figure 50 (Left) A staff portrait that suggests carelessness through posture

Figure 51 (Middle) A staff portrait that suggests carelessness through posture

Figure 52 (Right) A staff portrait that shows nervousness through the hand gesture

The same body gestures indicate different meanings in different cultures. The image below (Figure 53) is a good sample. An image of a group of medical staff members raise their arms over their heads with an excited facial expression, that represents cheerfulness, confidence, and vitality to an American audience; yet, to a Chinese audience it does not convey positive meanings. This doesn't fit with Chinese cultural values. As noted in Chapter 2, Chinese people are taught to be in moral self-control and not to reveal dramatic emotions in public to show self-respect and authority. Medical staff members and doctors are especially required to have these values. Therefore, the body gestures shown in Figure 4.29 are considered distrustful, unprofessional, and suggest that these people are not qualified to be medical doctors.



Figure 53 Staff members' portraits indicates different meanings in Chinese and American culture

Cropped figures should be combined with text to clarify the meaning since gestures may have multiple meanings without context. The hand gesture of the image below (Figure 54) can be interpreted as a doctor stretching his fingers before an operation, which indicates skilled and well prepared. It can also be interpreted as nervous, if the hand belongs to a medical intern before his first operation.



Figure 54 An image showing an ambiguous hand gesture

Image of staff members with uniforms and masks (Figures 55) are not recommended. This may evoke memories of bad medical experiences or the bad experiences of others.



Figure 55 A staff member's portrait with the faces covered by masks

Angles for staff portraits

Selecting an image taken in the appropriate angles is an important strategy in picturing good services for viewers. The image on the left-hand side (Figure 56) is taken from a high angle. Staff members in the photo look up towards camera. This indicates that staff members will never look down on a patient and they provide thoughtful and careful services. On the contrary, the image on the right-hand side (Figure 57) is taken from a low angle. It reveals a feeling of power or being in control towards the viewer.



Figure 56 (Left) A staff image taken from a high angle

Figure 57 (Right) A staff image taken from a low angle

Portrayal of patient's images

Figure 58 shows a patient in the foreground with a joyful facial expression, with his/her family and medical staff behind them in the background. The delightful patient and his/her family indicate a feeling of satisfaction with the services. Staff members shown in the background indicate they are supportive. Satisfaction comes from the services these staff members provide.



Figure 58 A portrayal of a satisfied patient with family members and staff in the background

Portrayal of famous people's images

Images of famous people indicate that good services/products are guaranteed. The image below (Figure 59) is a food product, using the image of Mao indicates the quality of this product is guaranteed. These images are generally used in conjunction with an inscription/signature of the person to indicate satisfaction and trust.



Figure 59 A record package using an image of a famous person

A good attitude for staff and a staff is attentive to patient's needs

Showing images of people who are in the same situations as the target audience is an effective way to make connection with the viewers. Good attitudes expressed via interactions between staff and patients, including facial expressions, body gestures, and eye contact, show that the staff members listen and assist their patients. Selected images that show these interactions are discussed below.

Facial expressions

The image on the left-hand side (Figure 60) reveals both patient satisfaction and the attentiveness of staff by capturing their facial expression at the same time. The image on the right-hand side (Figure 61) shows only the staff's facial expressions, although many viewers may still be able to picture themselves in the situation automatically. To viewers, Figure 60 indicates an attempt to show more care for how a patient feels. But, Figure 61 focuses on how staff and services are provided to patients. This reveals a conspicuous

purpose of hospitals to self-promote.



Figure 60 (Left) An image showing both patient and staff facial expressions



Figure 61 (Right) An image showing only show staff's facial expressions

Body gestures

Body gestures play an important role when interpreting meanings of an image. The following four examples demonstrate how the same interaction can be interpreted differently by changing body gestures. Figures 62 and 63 capture action of a treatment being applied to a patient. In the image on the left-hand side (Figure 62), a staff squats to apply treatment to a patient in a wheelchair. Her body gesture indicates she respects the patient and treats him equally. In the image on the right-hand side (Figure 63), the patient seems to be controlled and guided because of the differences in the heights that create a hierarchy order between these two people.



Figure 62 (Left) A staff member squats to apply treatment

Figure 63 (Right) A staff member stands to apply treatment

Many body gestures reveal an unconscious attitude. Leaning towards a talking person shows an attempt to listen attentively (Figure 64). Working together on a task with hands overlapped indicates patient assistance (Figure 65). However, body gestures, especially hand gestures, have different meanings within different cultural contexts. For example, a widely accepted hand gesture of “ok” (Figure 66) means all right, good, and approval in America, but for people from some other countries, it is related to Buddhism (Figure 67).



Figure 64 (Left) A staff member listens attentively

Figure 65 (Right) A staff member assists with a patient



Figure 66 (Left) A hand gesture means “ok” in America

Figure 67 (Right) A typical hand gesture of Buddha in China

Eye contact

A person who has a happy facial expression and looks at the camera in a photo is interpreted as one who has a good attitude towards viewers (Figure 68). In the same way, a person who has a happy facial expression and makes eye contact with others in a photo is also considered as having a good attitude (Figure 69).

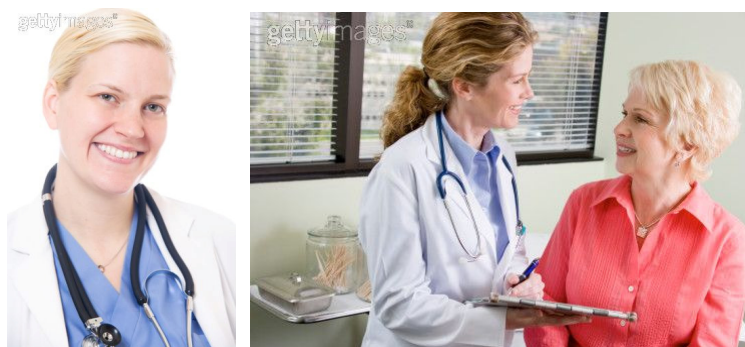


Figure 68 (Left) A staff member smiles while looking at the camera

Figure 69 (Right) A staff member smiles while having eye contact with a patient

Lighting

Lighting of an image influences viewers' perceptions of staff attitudes as well. The perception of lighting also associates with viewers' social and cultural backgrounds, and personal experience, but, in general, photos taken in a dark setting are not recommended for use on a hospital website. People in the dark are associated with negative feelings in many cultures. Most likely, viewers will question staff patience and sincerity, if they see an image with a doctor in the dark (Figure 70).

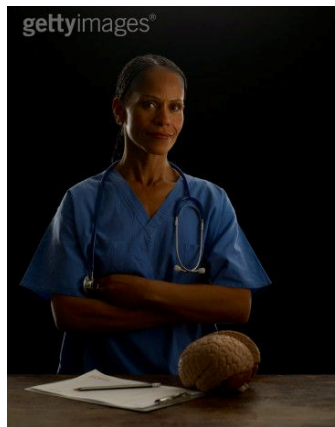


Figure 70 A staff member portrayed with a dark light setting

Physical comforts, infant care classes, and basic knowledge for delivery

Physical comfort can be pictured by the images below which show continuous support (Figure 71), attentive listening (Figure 72), and closely connected staff (Figure 73). As shown below, staff and patients need to appear in the same image and staff should always be in an appropriate position in the images.



Figure 71 (Left) An image shows continuous support

Figure 72 (Right) An image shows attentive listening



Figure 73 An image shows patient is closely connected to staff

Satisfied with professional and medical treatment

Excellent professionals and medical treatment are associated with images of advanced equipment and skilled staff. Three images that contain these two elements are shown below in different combinations. In the image on the left-hand side (Figure 74), doctors are located in the center of the image to indicate people are dominant. A staff members standing behind the equipment in Figure 75 shows staff is prepared and ready. The image on the right-hand side (Figure 76) only shows a set of equipment. Figure 74

indicates that staff is capable to make good use of their facilities to treat patients. Figures 75 and 76 are weaker in persuading people to believe they will receive quality care by skilled staff.



Figure 74 (Left) An image shows staff manipulating equipment

Figure 75 (Middle) An image shows staff standing behind equipment

Figure 76 (Right) An image that only shows equipment but no staff

Image of the past

As noted, images that show good hospital services are associated with advanced equipment or the latest techniques. Obviously, images of outdated equipment or techniques do not work to strengthen these feelings. However, images associated with a significant historical moment occurring in the hospital or images with a historically significant person associated with the hospital are considered compatible to use to present these features. This especially works in China, because it fits Chinese cultural values mentioned in Chapter 2. Chinese people are very historically oriented. Once a relationship with services is connected, it is difficult to break. An image of Chairman Mao meeting with medical staff (Figure 77) is reliable to indicate the hospital's services are guaranteed for many Chinese. Images of a trophy or awards gained in the past also indicate the people/facilities/ are capable to provide good service. The image on the right-hand side of

Figure 78 is an image of the Chinese soccer team winning the game and returning to China with the cup.

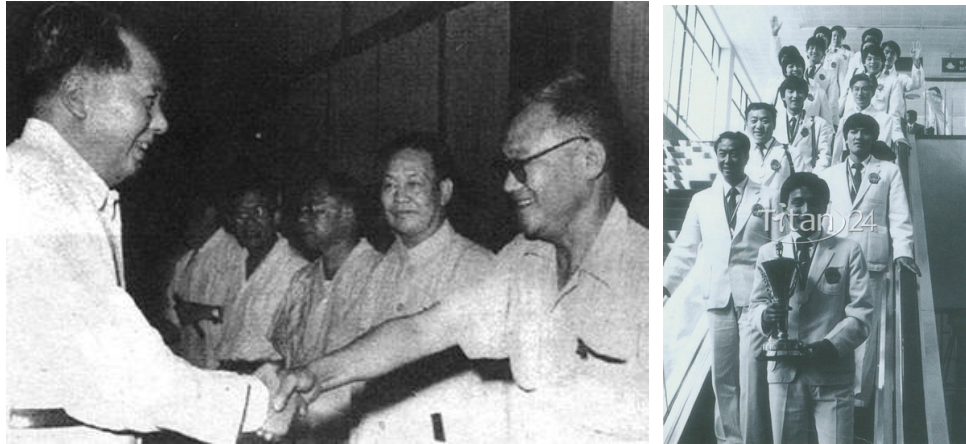


Figure 77 (Left) Chairman Mao meeting with medical staff

Figure 78 (Right) Chinese soccer team returning with a golden cup

4.3.6 Findings of image study

Using images according to the suggestions discussed above graphically addresses the five desired needs determined by the survey's results. These suggestions provide a guideline for image usage in many situations. It addresses who needs to appear in the image, the order they need to be arranged in the image, the implications of body gestures, the relationship between objects and figures in the image, lighting, and culture implications of the images.

4.3.7 Negative/positive space and hierarchy

According to Arntson (1998), positive and negative space is also called “figure and ground” (Arntson, 1998, p. 41). Stable, reversible, and ambiguous are three main categories in positive/negative space shaping. Effective figure/ground space usage in a

layout clearly arranges information that consumers seek in an organized manner. Four basic principles are discussed below along with the descriptions of how they work with website page layout design.

First, enclosed forms and the surrounding areas tend to be seen as an enclosed shape. A die-cut image has the same function. Figures 79 and 80 show the layout of a website before and after the staff figure is die-cut. The cut out image in the mockup website's layout shown below (Figure 80) is clearly distinguished from the white space around it. Compare Figure 79 with Figure 80. It is obvious the die-cut image stands out more than the one embed in the background.

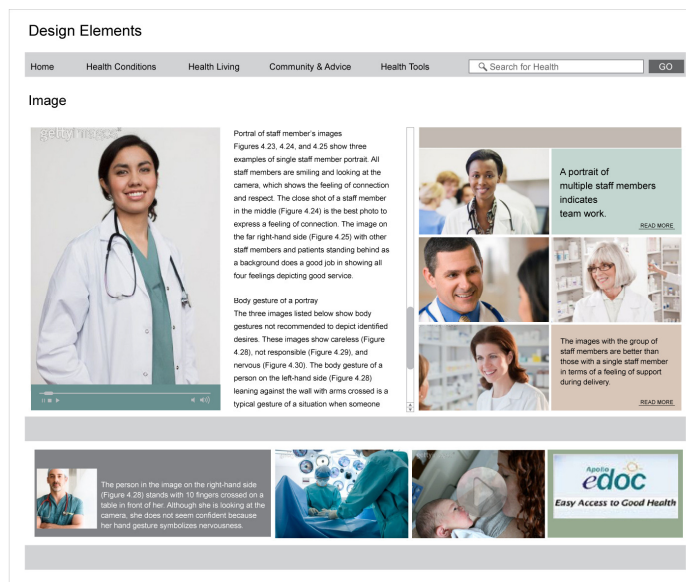


Figure 79 A mockup website layout before the staff figure on the left is die-cut from the background of the image

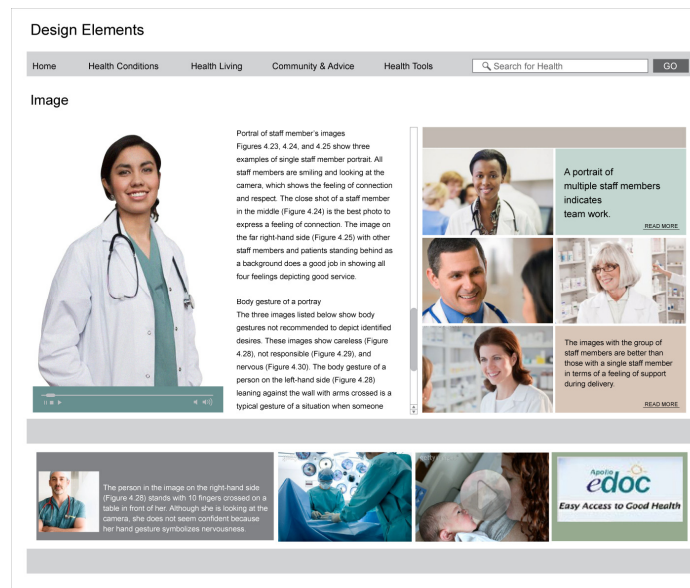


Figure 80 A mockup website layout after the staff figure is die-cut from the background

Second, visual texture can add interest to a layout. By arranging text into shaded blocks it can also be given a greater sense of hierarchy and visual interest. Figures 81 and 82 show a layout of a website before and after the text are arranged into color blocks. In Figure 82, the viewers' eyes are lead to the text when they first view the layout. The colored blocks create a visual texture by shaping text into "figure" and transforming the white area around it into "ground." A comparison of Figure 81 with Figure 82 shows that adding visual texture is an effective way to strengthen the visual elements that need emphasis.

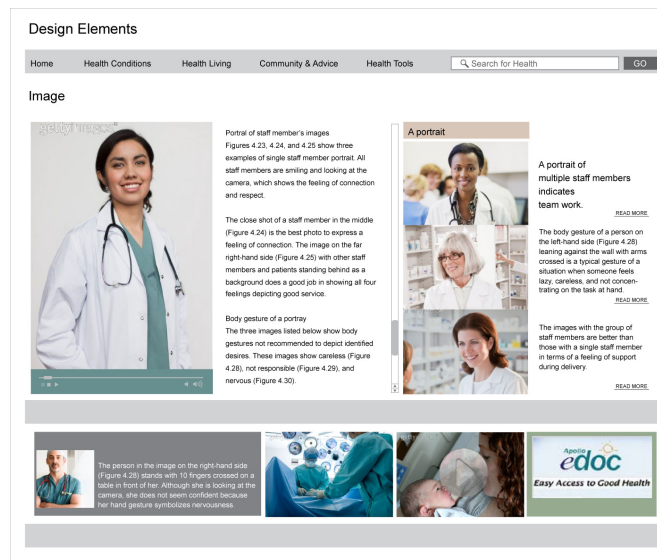


Figure 81 A mockup website layout before adding colored blocks into the text

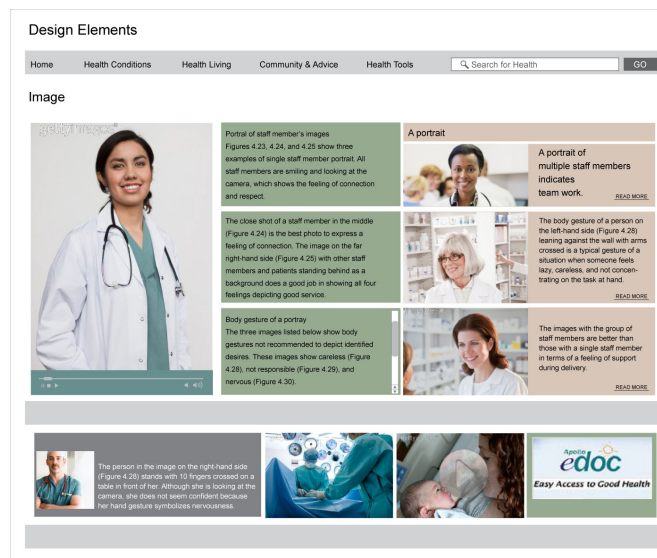


Figure 82 A mockup website layout after the text is arranged into colored blocks

Third, the smaller an area of space, the greater it is seen as a figure. One method to ensure viewers are not lost when a layout contains many images is to reduce the size of the images that viewers see first. Figures 83 and 84 show a mockup website layout before and after the image sizes are reduced. Figure 84 has smaller images that provide more

white space around the images by reducing the size of them. The enlarged “ground” assists viewers’ eyes to distinguish the edge of the images. On the contrary, the reduced white spaces around the images in Figure 83, makes it difficult for viewers to concentrate on an individual image.

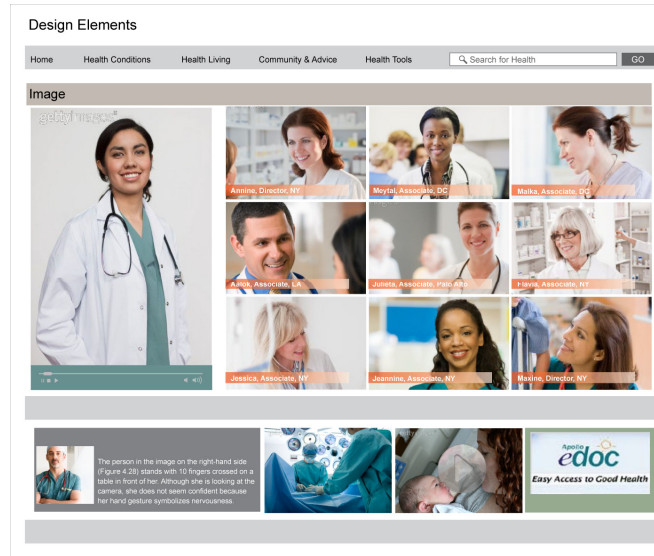


Figure 83 A mockup website layout before the image on the right are reduced in size

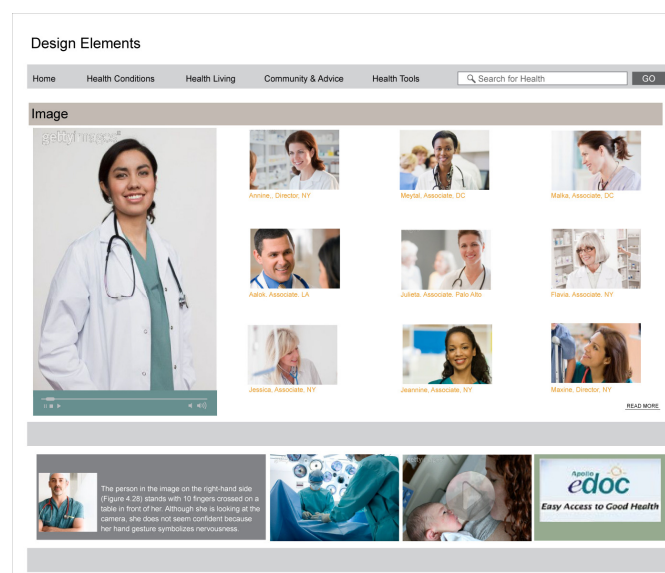


Figure 84 A mockup website layout after the image are reduced in size

Fourth, there is a tendency for area with higher contrast to be more prominent. In Figure 85, black and white texts are both displayed in one mockup website layout over a medium grayish green background color. The contrast between green and black is greater than the contrast between green and white. This makes the black text more obvious and more prominent in terms of hierarchy. On the contrary, the white text is not easy to define which makes it less prominent in terms of hierarchy.

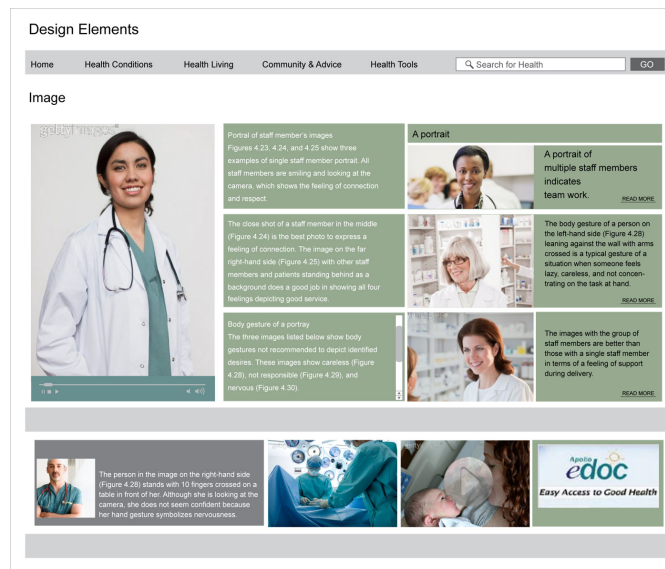


Figure 85 A mockup website layout showing both black and white text on a green background

4.3.8 Findings of negative/positive space and hierarchy study

This section discusses four ways to emphasize information by manipulating principles of negative/positive space and hierarchy. These principles can help designers arrange the visual hierarchy of information to be consistent with the findings of the target audience preferences as indicated by the results of the survey.

CHAPTER 5. EVALUATION OF FIVE EXISTING WEBSITE DESIGNS IN SHANGHAI

5.1 Features of Five Selected Hospitals

Based on a list of hospitals divided by Satterfield and Huang (2007) in their research on birthing hospitals during 2007 (Figure 86), five hospitals in Shanghai were selected for analysis in this chapter. They are picked from third and second tiers of health care system in Shanghai, each hospital has several typical characteristics that young couples in Shanghai look for in a maternity hospital, as identified by Satterfield and Huang. The websites are maturely developed. They contain all visual elements for the author to analyze. The hospitals selected for analysis are 1) Yangpu District Maternity and Child Health Hospital (YP DMCH), 2) International Peace Maternity Child Health Hospital of the China Welfare Institute (IPMCH), 3) Shanghai Second Medical University Affiliated Xinhua Hospital (SH XHH), 4) Shanghai Changning Maternity and Child Health Hospital (SH CNH), and 5) Pathway Health (P H). These characteristics are discussed in the following paragraphs.

	A convenient location	The opportunity to choose from a variety of birthing options	The reputation of the facility*1 (1-4)	The cost of services*2 (1-5)	The availability of private attending medical care	Private pre-birthing rooms	Attractive hospital rooms or facilities	The availability of classes*3	The availability of midwife services
District hospitals	Yangpu Maternity and Childhealth Hospital	★	2	1				★	★
	Changning Maternity and Childhealth Hospital	★			★	★	★	★	
	Huangpu Maternity and Childhealth Hospital	★				★		★	★
	Hongkou Maternity and Childhealth Hospital	★				★		★	★
	Municipal hospitals	International Peace Maternity and Childhealth Hospital of the China Welfare Institute	★	4	4	★	★		★
Fudan University Medical College Affiliated Maternity Hospital (Red House Hospital)		★				★		★	★
The First Maternity and Childhealth Hospital		★	2			★		★	★
Shanghai Second Medical University Affiliated Xinhua Hospital		★				★		★	★
Composite hospitals		Shanghai Jiaotong University Affiliated Ruijin Hospital		1					★
	Shanghai Jiaotong University Affiliated No.1 People's Hospital	★						★	★
	Special outpatient services		2	3	★	★	★		★
International hospitals	World Link	★	3	5	★	★	★	★	★
	United Family	★				★	★	★	★
	East International	★				★	★	★	★

*1: 4- Very Good, 3- Good, 2- Average, 1- Soso
 *2: 5- Above 50,000 RMB, 4- Above 40,000 RMB, 3- Above 25,000 RMB, 2- Around 6,000 RMB, 1- Around 5,000 RMB
 *3: Classes such as child birth, infant care, and breast feeding

Figure 86 Childbirthing hospitals and their set of features

Yangpu District Maternity and Child Health Hospital (YP DMCH)

The YP DMCH is a small-scale, outdated facility. It has low cost, sufficient basic services, conveniently located, and the available midwife services.

Small-scale and outdated facilities

YP DMCH was built during the 1960s and the hospital's facilities haven't changed over the past several decades. The scale of the hospital is comparatively small; it only has 154 available beds.

Convenient location

YP DMCH is located in the Yangpu District, one of the two districts in Shanghai with a population over 1,000,000 people. There are about 1,080,300 people who live in the Yangpu District (WHO, 2004). As noted in Chapter 1, there are only several well-known hospitals, which provide birthing services in each district. Most pregnant women prefer to deliver babies at a birthing hospital located near their home (Satterfield & Huang, 2007). Therefore, the Yangpu District DMCH has been a popular hospital, due to its convenient location.

Choice of birthing options

YP DMCH provides different birthing-related options for consumers. These include Lamaze, water birthing, and infant care classes.

Low cost on services

The cost of natural childbirth at YP DMCH, which would mean staying at the hospital three days after delivery without insurance, is around 5000 RMB (approximately \$735). Compared to other childbirthing hospitals, YP DMCH has a reasonable price for

childbirth.

Sufficient basic services

The YP DMCH provides a couple of basic classes on basic infant care and breastfeeding. It also offers midwife services.

International Peace Maternity Child Health Hospital of the China Welfare Institute (IPMCH)

The IPMCH is a large-scale hospital. It is higher in cost, but has a great reputation and offers plenty of options with regards to hospital room selection.

Large scale

IPMCH was founded in 1952 by Song Qingling, honorary president of the People's Republic of China. He used the International Stalin Peace Award to found the hospital. It has 370 beds available.

Great facility reputation

“An important reason for the people of Shanghai to choose a specific birthing hospital is trust” (Satterfield & Huang, 2007, p. 3). IPMCH is a good example of a hospital that instills trust. Because it has won many domestic and international women and infants' healthcare awards, including an award conferred by the World Health Organization and The United Nations Children's Fund, it is provided as highly trustworthy.

Many options for selecting hospital rooms

The VIP center at IPMCH provides four different types of rooms for consumers to select. The rooms are all private. The main differences between these rooms are 1)

furniture; some rooms have a bigger sofa, and 2) the scale of the room; the more expensive rooms have an extra living room for new mothers to meet with visitors.

Higher costs

The cost of the VIP center at IPMCH is higher than costs found at other local birthing centers. The average cost for a natural childbirth (stay at hospital three days after delivery without insurance) at the VIP center costs usually around 40,000 RMB (\$5,882).

Shanghai Second Medical University Affiliated Xinhua Hospital (SH XHH)

The SH XHH is one of the most popular composite municipal hospitals that provides childbirth services. It has a good reputation, convenient location, and a fair cost.

Convenient location and good reputation make SH XHH a very popular place to deliver babies

The same with YP DMCH, SH XHH is located in the Yangpu District, which has one of the largest populations in Shanghai. Moreover, SH XHH is also the hospital leader for infant and childcare in China. Therefore, it is an ideal place to deliver babies, not only for people who live in the area, but also for people who live in other districts.

Fair cost

The cost to go to SH XHH is fair, based on its reputation. Natural childbirth. For a 3-day stay at the hospital after delivery without insurance at SH XHH usually costs around 6000 RMB (\$882).

Shanghai Changning Maternity and Child Health Hospital (SH CNH)

SH CNH is one of the most actively developing childbirthing hospitals in Shanghai. It has a variety of classes on childbirth, infant care, and/or breastfeeding. SH CNH is also

the first hospital in China that provides a water birth service. The facilities have also been remodeled in recent years.

Low cost for reasonable services

The cost for a natural childbirth at SH CNH (stay at hospital three days after delivery without insurance) is around 5000 RMB (around \$735).

Pathway Health (P H)

Pathway Health is one of the most popular international hospitals providing childbirth services in Shanghai. Although it is open to anyone, its main customers are foreigners in Shanghai, due to its high cost.

High cost of services

The cost of natural childbirth at Pathway Health (stay at hospital three days after delivery without insurance) is around 50,000 RMB (around \$7,352).

The availability of private attending medical care and private pre-birthing rooms

Almost all doctors at Pathway Health are from the United States. These doctors provide one-on-one care. Private, pre-birthing rooms are available for all customers.

5.2 Explanations of Evaluation Method for Five Childbirthing Hospitals in Shanghai

Five selected hospitals' website pages (homepage and 2-3 following pages) are evaluated in the following paragraphs. The evaluation is based on five assessments from the survey's results. The five assessments are listed: 1) a beautiful facility, and a nice environment and good service, 2) good attitude exhibited by the staff, 3) staff is attentive to patient's needs, 4) physical comfort, infant care classes, and basic knowledge of

childbirth and delivery, 5) satisfied with professional and medical treatment. The photographic analysis method: “classification and counting” (Malven & Fowles, 1990) is used to identify, categorize, and count design elements during the evaluation and the assessments based on discussions from reviewed literatures and the design variables early in this chapter are used to evaluate whether or not the identified cultural and emotional factors associate with target audiences of childbirthing hospitals in Shanghai are graphically addressed.

5.2.1 Yangpu District Maternity and Child Health Hospital (YP DMCH)

Evaluation based on five assessments

Element: color

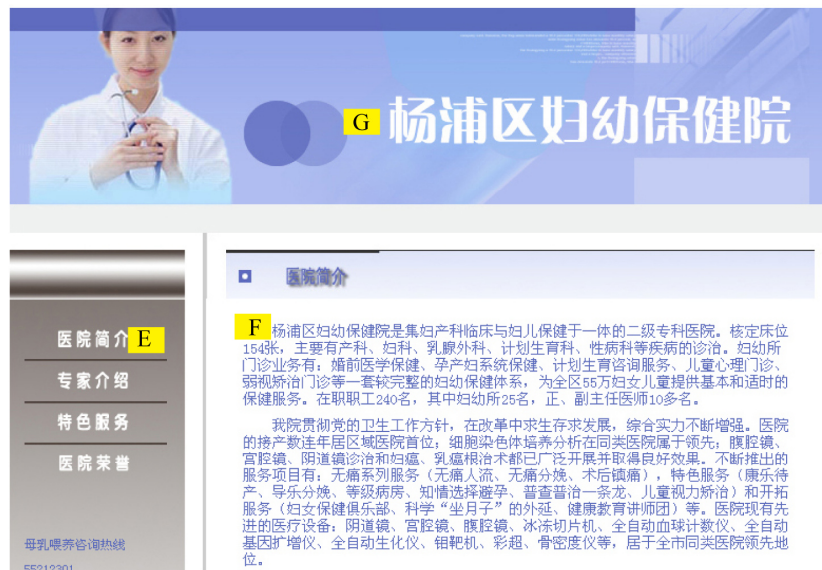


The messages for each colored element	An interpretation of evaluation	Meaning of the color in Chinese culture
<p><i>Blue</i></p> <p>A1 Background color of hospital name and text color of explanation of hospital services.</p>	<p>Blue fulfills the desire for <i>good service</i> for this website because it represents distance and low status in China. It indicates that the hospitals' services are under the supervision of professionals. It also indicates that there is quality service with a low cost, which matches the criteria of a good service, that most blue-collar consumers value.</p>	<p>Distance, status (low)</p>
<p><i>Gold</i></p> <p>A2 Color to show merit for good hospital services.</p>	<p>Gold fulfills the desire for <i>a beautiful facility, a nice environment, and good service</i> for this website. The color close to the gold that represents authority in China. It indicates that good service is undoubtedly guaranteed.</p>	<p>Authorities, status (high)</p>
<p><i>Red</i></p> <p>B Color to show merit for good hospital services.</p>	<p>Red fulfills the desire for <i>a beautiful facility, a nice environment, and good service</i> for this website. A value close to red represents authority in China. It indicates an undoubtedly high-quality guarantee for services.</p>	<p>Authorities</p>
<p><i>Gray</i></p> <p>C Background color of text for a list of hospital services.</p>	<p>None</p>	<p>None</p>
<p><i>Green</i></p> <p>D Text color for a hospital services list and background of specialists' name list.</p>	<p>Green fulfills the desire for <i>satisfaction with professional and medical treatment</i> for this website. It represents a feeling of value and indicates the hospital's services provided by its specialists are of high quality.</p>	<p>Desirable, vital, valuable</p>

Figure 87 Evaluation of YP DMCH website-Color

Evaluation based on five assessments

Element: typeface



The messages of each typeface delivered	An interpretation of evaluation	Typographic style implication
<p><i>Cu Yuan</i></p> <p>E Name of the hospital services</p>	<p>The typeface choice—Cu Yuan—fulfills <i>a desire for good attitudes to be exhibited by the staff member</i> because of its graceful curves and it gives viewers a feeling of friendliness. Moreover, use of this typeface represents services of the hospital strengthens the attentiveness side of the hospital service and provides a sense of welcome.</p>	<p>Relaxed and friendly</p>
<p><i>Zhong Hei</i></p> <p>F The information of hospital services</p>	<p>The typeface choice—Zhong Hei—fulfills <i>a desire for good service</i> for this website. Its form contains hard, straight edges, and angular corners. These give viewers a feeling of rationalism and professionalism. Choosing this typeface to represent an introduction to hospital service shows the authority of hospital professionals.</p>	<p>Rational and professional</p>
<p><i>Zong Yi</i></p> <p>G Name of hospital</p>	<p>The typeface choice—Zong Yi—fulfills the desire for <i>good service</i> for this website. Its forms contains hard, straight edges, and angular corners, which gives viewers a feeling of professionalism. Choosing this typeface to represent the name of a hospital emphasizes friendliness, a welcome attitude, and feelings of attentiveness.</p>	<p>Rational and professional</p>

Figure 88 Evaluation of YP DMCH website-Typeface

Evaluation based on five assessments
Element: images







Size of each image x= area per square	What is each image about?	An interpretation of evaluation
H 20x	A nurse	The image of a nurse indicates <i>a good attitude</i> exhibited by the staff because she is looking at the camera with a smile. 
I 101x	The entrance of hospital	The image of the hospital's entrance indicates <i>a beautiful facility and a nice environment</i> because the entrance is clean with a clear glass door and decorated with trees. This indicates the environment of the hospital is in good condition. 
J 14x	Photos of specialists	Photos of specialists indicate <i>good service and good attitudes exhibited by the staff members</i> because the number of staff members indicates the hospital has strong technical support. Most staff members in the photos are smiling, indicating a friendly atmosphere in the hospital. 
K 91x	A photo of awards for good hospital service	The images of awards for good hospital services indicates <i>good service</i> because Chinese people are very history-minded. Once a hospital has a good reputation, it can be a selling point for a long time. 

Figure 89 Evaluation of YP DMCH website-Image

Evaluation based on five assessments
Element: negative/positive space



What are the emphasis elements about?	An interpretation of evaluation
H A nurse	A photo of a nurse is emphasized on the homepage (on the left-hand side). This indicates the characteristics of services emphasized by the <i>good attitude exhibited by staff members</i> because the viewer's eyes are attracted to the die cut photos.
J The interpretation of evaluation	Photos of specialists are emphasized on the right-hand side. This indicates a strong support from specialist teams as another selling point for the hospital.

Figure 90 Evaluation of YP DMCH website-Negative and positive space

Summary of the evaluation for YP DMCH and recommendations

Overall, this website did well to address the three desired needs by using several typefaces and images. However, this website lacks hierarchy in display information and fails to create visual interest in the design. It may cause the audience to loose interest when visiting the website because it doses not visually appeal to expectant mothers'

expectations. Additionally, the lack of visual hierarchy may extend their time for browsing the website. As previously mentioned, expectant mothers often have limited time to browse online. Therefore, it is important to ensure the information is in hierarchical order.

5.2.2 International Peace Maternity Child Health Hospital of the China Welfare Institute (IP MCH)

Evaluation based on five assessments

Element: color



The messages for each colored element	An interpretation of evaluation	Meaning of the color in Chinese culture
<p><i>Blue</i></p> <p>A Background color of feature services</p>	Blue used in this website fulfills the desire for <i>good services</i> for this website because it is the background color of the inscription of famous people—Song, qingling—she is the honorary president of China. This color indicates the hospital services are of high quality.	Distance
<p><i>Red</i></p> <p>B Background color of the inscription of the Chairman in China.</p>	Red fulfills a desire for <i>good service</i> for this website because this color of red is closest to the red that represents authority in China. It is used as a background color for the Chairman's inscription. This indicates that good services are undoubtedly guaranteed.	Authorities
<p><i>Green</i></p> <p>C Background color of text for featured services.</p>	Green is not used to fulfill any desired need of the five assessments.	None
<p><i>Orange</i></p> <p>D Background color of the hospital logo.</p>	Orange fulfills the desire for <i>good service</i> for this website because orange is used as the background for the hospital logo. This indicates a feeling of happiness and joy.	Joy

Figure 91 Evaluation of IP MCH website-Color

Evaluation based on five assessments
Element: typeface



The messages of each typeface delivered	An interpretation of evaluation	Meaning of the color in Chinese culture
<p><i>Zhong Hei</i></p> <p>E Function menu for the website.</p>	<p>The typeface choice—Zhong Hei—fulfills a desire for <i>good services</i> for this website because its form has hard, straight edges and angular corners. These give the viewers feelings of rationality, distance, respect, and a feeling of being in control. It is one of the most important characteristics for a hospital that provides good service in China.</p>	<p>Rational and professional, distanced</p>
<p><i>Zong Yi</i></p> <p>F Typeface for the logo.</p>	<p>The typeface choice—Zong Yi—fulfills the desires for <i>good service</i> in this website because the letter c is formed from hard, straight edges, and angular corners. These give the viewers feelings of rationality, distance, and respect. Used as the typeface for the hospital logo, it gives viewers feelings of professionalism and trust.</p>	<p>Rational and professional, distanced</p>
<p><i>Shu Tong</i></p> <p>G Text for the hospital featured services menu.</p>	<p>The typeface choice—Shu Tong—fulfills the desire for <i>good service, good attitudes exhibited by the staff, and a staff that is attentive to patient's needs</i> for this website. It resembles Chinese calligraphy which conveys positive feelings in China, including authority, respect, trust, high quality, and a good reputation.</p>	<p>Relaxed and friendly</p>

Figure 92 Evaluation of IP MCH website-Typeface

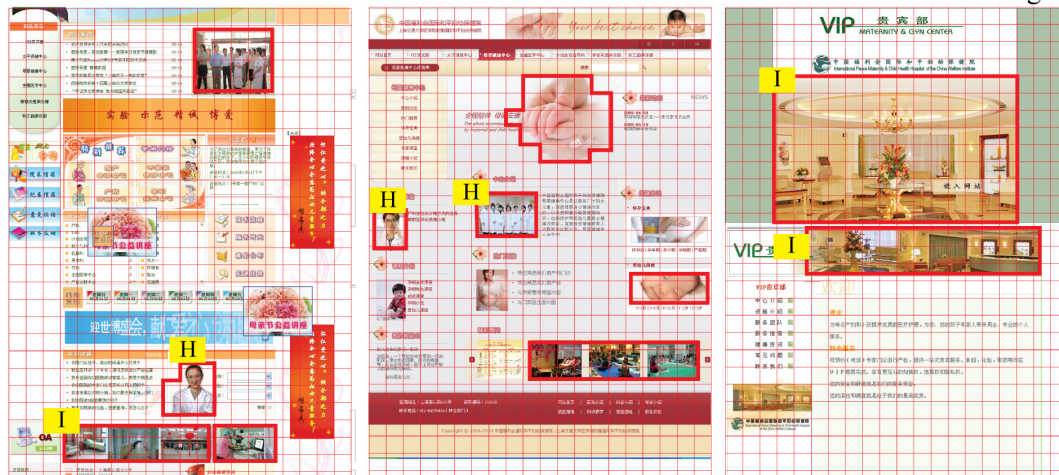
Evaluation based on five assessments
Element: typeface



The messages of each typeface delivered	An interpretation of evaluation	Meaning of the color in Chinese culture
<p><i>Xing kai</i></p> <p>H</p> <p>Text for the quality control services menu.</p>	<p>The typeface choice—Xing Kai—fulfills the desire for good service, good attitudes exhibited by the staff, and a staff that is attentive to patient's needs for this website. It resembles Chinese calligraphy, which conveys positive feelings in China, including authority, respect, trust, high quality, and a good reputation. Using Xing Kai to present text for the quality control services menu gives viewers trustful feelings.</p>	<p>Relaxed and friendly</p>
<p><i>Da Lishu</i></p> <p>I</p> <p>Text for the hospital featured services menu.</p>	<p>The typeface choice—Da Lishu—fulfills the desire for good service, good attitudes exhibited by the staff, and a staff that is attentive to patient's needs for this website. It resembles Chinese calligraphy which conveys positive feelings in China, including authority, respect, trust, high quality, and a good reputation. Using Da Lishu to present text for the hospital featured services menu indicates that these services are high quality.</p>	<p>Relaxed and friendly</p>

Figure 93 Evaluation of IP MCH website-Typeface (continue)

Evaluation based on five assessments
Element: images



Size of each group of images x= area per square	What is each image about?	An interpretation of evaluation
H 20.5x	Staff members portrayed	<p>Images of staff members indicate that a <i>good attitude is exhibited by the staff and there is good service</i> because all of the staff members are looking directly at the camera with a smile, and the team shot indicates strong medical support. However, the image of a single staff member with her arms crossed is not appropriate because it shows an unfriendly attitude and gives the feeling that the viewers are being controlled.</p>
I 188x	Shot of the hospital lobby, rooms, and waiting areas	<p>Photos of a decorated hospital lobby, rooms, and waiting areas indicate a <i>beautiful facility and a nice environment</i> to people who live in Shanghai. They have a long history of contact with West and consider hospitals with nice interior design from the West to be visually pleasing.</p>

Figure 94 Evaluation of IP MCH website-Image

Evaluation based on five assessments
Element: images



Size of each group of images $x = \text{area per square}$	What is each image about?	An interpretation of evaluation
J 100.5x	Infant care and childbirth related class; portray the founder of YP DMCH—Song, qingling, honorary president of the People's Republic of China; equipment; shots of mother and baby's hands, leaders visiting the hospital	<p>The image of classes, a happy baby and mother, portraits of a famous founder, and leaders visiting the hospital indicate <i>good service</i>; because providing knowledge of birthing, having a happy birthing experience, and a good reputation are proven by images of famous people. These people indicate that good service must be taking place in Shanghai. Having images of a Western woman and advanced equipment indicate strong technical support and advanced services adopted from the West, which also indicates good service.</p>

Figure 95 Evaluation of IP MCH website-Image (continue)

Evaluation based on five assessments
Element: negative/positive space



What are the emphasis elements about?	An interpretation of evaluation
<p>Portrayal of the founder of YP DMCH—Song Qingling, honorary president of the People's Republic of China; a staff member smiling</p> <p>J H</p>	<p>A photo of the founder emphasized on the homepage (on the upper left-hand side) indicates good service because the viewer's eyes are attracted by the die cut photos. It reminds viewers that the quality of services are guaranteed.</p> <p>An image of a staff member smiling is emphasized (on the lower left-hand side). It attempts to indicate the good attitude exhibited by staff members because the viewer's eyes are attracted by the die cut photos. However, as mentioned in the photo analysis section, it failed because of the staff's inappropriate body gesture.</p>

Figure 96 Evaluation of IP MCH website-Negative and positive space

Summary of the evaluation for IP MCH and recommendations

Four colors and five typefaces are used with this website to indicate two desired needs. It is recommended to use less colors and fonts to reduce superfluous data and allow website visitors to concentrate on the site's information. However, this website makes very good use of images—the photo of Song Qingling—honorary president of the People's Republic of China is used to evoke Chinese peoples' history-minded values (Chinese cultural values—time orientation).

5.2.3 Shanghai Second Medical University Affiliated Xinhua Hospital (SH XHH)

Evaluation based on five assessments
Element: color



The messages for each colored element		An interpretation of evaluation	Meaning of the color in Chinese culture
Blue A	Background color of hospital name and portrayal of famous people's statuary	Blue fulfills the desire for <i>good service</i> for this website because the blue used in the image is one of the cool colors. As a background for a famous person's statuary, it represents distance and respect. It indicates that the hospital provides high quality services.	Distance, status (low)
Red B	Color of a wall in a meeting room	Red fulfills the desire for <i>good service</i> because this color of red represents authority in China. As the background of a meeting room it represents the leader of the Communist Party.	Authorities
Green C	Color of a shelf in a laboratory	Green fulfills the desire for <i>good services</i> because this color represents youth and vitality. As the dominant color of a laboratory, it indicates growing technical support and good service.	Young
Orange D	Background colors of text for propaganda advertise	Orange fulfills the desire for <i>good service</i> because it is the color used in the hospital logo. This indicates satisfaction of the services and feelings associated with positive emotions such as happiness and joy.	Joy

Figure 97 Evaluation of SH XHH website-Color

Evaluation based on five assessments
Element: typeface



The messages of each typeface delivered	An interpretation of evaluation	Typographic style implication
<p><i>Zhong Hei</i></p> <p>E</p> <p>Name of the hospital services</p>	<p>The typeface choice—Zhong Hei—fulfills the desire for <i>good service</i> for this website because its form contains hard, straight edges, and angular corners. These give the viewer a feeling of rationalism and professionalism. Choosing this typeface to represent basic functions gives the viewers organized and professional feelings.</p>	<p>Rational and professional</p>
<p><i>Da Hei</i></p> <p>F</p> <p>The information of hospital services</p>	<p>The typeface choice—Da Hei—fulfills the desire for <i>good service</i> because its form has hard, straight edges, and angular corners. These indicate the services of the hospital are professional.</p>	<p>Rational and professional</p>
<p><i>Xing kai</i></p> <p>G</p> <p>Name of hospital</p>	<p>The typeface choice—Xing Kai—fulfills desire for good service in this website because its form contain graceful curves and round angles. These give viewers a friendly and relaxed feeling which is one of the most important characteristics for good service and meeting the needs for its targeted audiences.</p>	<p>Relaxed and friendly</p>

Figure 98 Evaluation of SH XHH website-Typeface

Evaluation based on five assessments Element: images





Size of each group of images x= area per square	What is each image about?	An interpretation of evaluation
H 7 x	A doctor exams patient attentively	<p>The image of a doctor examining a patient attentively indicates a <i>good attitude exhibited by staff members and good services</i> because it matches the consumers' most important expectation for a childbirthing hospital—being treated in a friendly manner.</p> 
I 7 x	Shot of hospital waiting area	<p>The shot of a hospital waiting area attempts to indicate that this is a beautiful facility in a nice environment. Like other big cities, people often live in crowded conditions. This is a photo that shows the spacious interior of a hospital that matches the target audiences' expectations. However, the tight cropping of the picture does not help to address this expectation.</p> 

Figure 99 Evaluation of SH XHH website-Image

Evaluation based on five assessments
Element: images



Size of each group of images x= area per square	What is each image about?	An interpretation of evaluation
J 147.5x	Staff members portrayed, equipment, laboratory, a famous person's statuery, leaders visiting hospital	<p>The image of a staff member portrayed, equipment, and a laboratory shows <i>good service</i> because for most of people in Shanghai a good service consists of being treated in a friendly manner by staff members and receiving care based on advanced technology.</p>

Figure 100 Evaluation of SH XHH website-Image (continue)

Evaluation based on five assessments
Element: negative/positive space

Out standing



What are the emphasis elements about?	An interpretation of evaluation
<p>J Photo of a newly, established research team to treat kidney disease</p>	<p>A photo of a newly established research team for kidney disease emphasizes in the homepage the desire for satisfaction with professional and medical treatment.</p>

Figure 101 Evaluation of SH XHH website-Negative and positive space

Summary of the evaluation for SH XHH and recommendations

The selection of color and typefaces need improvement on the SH XHH website. The main colors used for this website are in conflict with each other in terms of their symbolic messages (warm color—red and cool color—blue). It is recommended to use either a warm or a cool color palette to create a cohesive atmosphere for this website (either focus on addressing friendly feelings or professional feelings). These colors and typefaces emphasize one desired need—good services. However, it is recommended that the

website address more than one need to satisfy the target audiences, who according to the survey, would also like to see options on topics such as birthing hospital services.

5.2.4 Shanghai Changing Maternity and Child Health Hospital (SH CNH)

Evaluation based on five assessments
Element: color



The messages for each colored element	An interpretation of evaluation	Meaning of the color in Chinese culture
<p><i>Red</i></p> <p>A Text color for a list of related services</p>	<p>Red attempts to fulfill the desire of good services because this color of red is an extended version of the red that represents authority in China. It shows professionalism and feelings. However, it does not fulfill this desired need because it is only used in a minority of the space.</p>	<p>Authorities</p>
<p><i>Orange</i></p> <p>B Background of the website.</p>	<p>Orange fulfills the desire for good service because it indicates satisfaction of the services and feelings associated with positive emotions such as happiness and joy. .</p>	<p>Joy</p>

Figure 102 Evaluation of SH CNH website-Color

Evaluation based on five assessments
Element: typeface



The messages of each typeface delivered	An interpretation of evaluation	Typographic style implication
<p>Zong Yi</p> <p>C</p> <p>List of featured menu</p>	<p>The typeface choice—Zong Yi—fulfills the desire for <i>good service</i> because its form has hard, straight edges, and angular corners. These indicate the services of the hospital are professional.</p>	<p>Rational and professional</p>
<p>Zhong Hei</p> <p>D</p> <p>List of related service menu</p>	<p>The typeface choice—Zhong Hei—fulfills the desire for <i>good service</i> for this website because its form contains hard, straight edges, and angular corners. These give the viewer a feeling of rationalism and professionalism. Choosing this typeface to represent basic functions gives the viewers organized and professional feelings.</p>	<p>Rational and professional</p>
<p>Xiu Ying</p> <p>E</p> <p>Slogan of the hospital services</p>	<p>The typeface choice—Xiu Ying—fulfills the desire for <i>good service</i> for this website because its form contains graceful curves and round angles. Combined with the attentive message the contents conveys, it gives viewers a friendly and relaxed feeling, which is one of the most important characteristics for good service and meeting the needs for its targeted audiences.</p>	<p>Relaxed and friendly</p>

Figure 103 Evaluation of SH CNH website-Typeface

Evaluation based on five assessments
Element: images





Size of each group of images x= area per square	What is each image about?	An interpretation of evaluation
F 5x	A “Dao Le” (midwife) exams patient attentively	<p>The image of a “Dao Le” (midwife) exams patient attentively. This indicates a <i>good attitude exhibited by staff members</i> because it matches the consumers’ most important expectation for a childbirthing hospital—being treated in a friendly manner.</p> 
G 119x	A series of historical and present photos of leaders visiting the hospital, local staff members provide treatment, Western babies, slogan carved besides the entrance door	<p>The images of a series of historical and present photos of leaders visiting the hospital, and the slogan carved beside the entrance door indicate good services because most Chinese are very history-minded as explained in Chapter 3. These photos indicate the hospital has a good reputation and continues good service to keep it. Local staff members provide treatment and images of Western babies indicate the hospital services have variety.</p> 

Figure 104 Evaluation of SH CNH website-Image

Evaluation based on five assessments
Element: images





Size of each group of images x= area per square	What is each image about?	An interpretation of evaluation
H 45x	Shots of nice designed interiors include hospital lobby, hospital yard, childbirth-related class rooms	<p>The shot of nicely designed interiors indicate this is a <i>beautiful facility in a nice environment</i> because photos of hospital environments with spacious interiors fulfill the desire of seeking a roomy space for most people in Shanghai. This matches their expectations.</p> 
I 15x	Classes for childbirth related courses	<p>Fulfills the desire for <i>satisfaction with professional and medical treatment</i> for this website. It represents a feeling of value and indicates the hospital's services provided by its specialists are of high quality.</p> 

Figure 105 Evaluation of SH CNH website-Image (continue)

Evaluation based on five assessments
Element: negative/positive space



What are the emphasis elements about?	An interpretation of evaluation
G Photo of a western baby	A photo of a western baby emphasizes on the homepage the good service because it indicates the western birthing idea and method are used in the hospital.

Figure 106 Evaluation of SH CNH website-Negative and positive space

Summary of the evaluation for SH CNH and recommendations

This website focuses on using images to successfully address all five desired needs. The selected colors indicate all positive emotions. However, the emphasis on Western babies on the homepage may lead to misinterpretation of an excessively high cost when using this hospital.

5.2.5 Pathway Health (P H)

Evaluation based on five assessments
Element: color



The messages for each colored element	An interpretation of evaluation	Meaning of the color in Chinese culture
<p><i>Blue</i></p> <p>A Background color of hospital content information</p>	Greenish blue on this website does not fulfill any desired needs because this color does not reflect with a particular message in Chinese culture. For most Chinese, it is just a random color.	None
<p><i>Orange</i></p> <p>B Background color of an icon representing information</p>	Reddish orange is a background color of an icon representing information. This color of orange creates a focal point of layout. However, it does not indicate any desired needs.	Joy
<p><i>Green</i></p> <p>C Background color of text for featured services</p>	Green fulfills the need of <i>good service</i> because this color does not reflect with a particular message in Chinese culture. Therefore, it is not used to fulfill any desired need of the five assessments.	Vital, valuable, desirable

Figure 107 Evaluation of P H website-Color

Evaluation based on five assessments
Element: typeface



The messages of each typeface delivered	An interpretation of evaluation	Typographic style implication
<p><i>Zhong Hei</i></p> <p>E</p> <p>Mission of hospital</p>	<p>The typeface choice—Zhong Hei—fulfills a desire for <i>good services</i> for this website because its form has hard, straight edges, and angular corners. These give viewers feelings of rationality and distance, which are appropriate to announce factors such as the hospital's mission.</p>	<p>Rational and professional</p>
<p><i>Zhong Yuan</i></p> <p>F</p> <p>Slogon of hospital</p>	<p>The typeface choice—Zong Yuan—fulfills the desire for <i>good service</i>. Good attitudes are exhibited by the staff members because of the font's graceful curves. The typeface gives viewers a feeling of friendliness.</p>	<p>Relaxed and friendly</p>

Figure 108 Evaluation of P H website-Typeface

Evaluation based on five assessments
Element: images





Size of each group of images x= area per square	What is each image about?	An interpretation of evaluation
H 110x	<p>Happy Western patients, local doctors talk to patient with eye contact, and a Western doctor looks at the camera and smile with other western staff members in the background</p> <p>Happy Western mother and baby</p>	<p>Images of Western staff members and happy Western patients indicate good services of the hospital because for most people in Shanghai, Western medical treatment represents advanced technology and are considered as good services. However, most staff members and patients are Western people, which is difficult for local potential target audiences to make a connection with themselves.</p> 
I 4x		<p>An image of happy Western mother and baby indicates good service because providing knowledge of birthing from the Western culture is considered one of the most important assessments of good services for target audiences in Shanghai.</p> 

Figure 109 Evaluation of P H website-Image

Evaluation based on five assessments
Element: images





Size of each group of images x= area per square	What is each image about?	An interpretation of evaluation
J 10.5x	A Western doctor exams patient attentively, using medical instruments	<p>A Western doctor exams patient attentively, indicating satisfaction with professional and medical treatment and good service for people who live in Shanghai because Western medical treatments represent advanced technology and are considered as good services. However, it also indicates an expensive service, which some target audiences may believe they will not be able to afford. A normal medical instrument is weak to strengthen the idea of advanced medical services.</p> <div>   </div>

Figure 110 Evaluation of P H website-Images (continue)

Evaluation based on five assessments
Element: negative/positive space



What are the emphasis elements about?	An interpretation of evaluation
K The updated name of the hospital	The updated name of the hospital emphasized on the homepage does not indicate any desired needs from survey results because the new name of the hospital is not familiar with potential target audiences. Therefore, it does not help to persuade consumers that it is a good service in a short time.

Figure 111 Evaluation of P H website-Negative and positive space

Summary of the evaluation for PH and recommendations

Three colors are used for this website and none reflect meanings for the Chinese culture. However, this is not a problem, since people in Shanghai are used to accepting new ideas, etc. Therefore, these colors will soon connect with the hospital's brand if they are continuously used together. The images used for this website are Western patients and only one image is of an Asian staff member. This makes it difficult for the hospital to attract the local target audiences, since it is difficult for local expectant mothers to make a

connection by looking at these images. It is recommended that the selection have a combination of western and local staff/ patients to better serve this purpose.

CHAPTER 6. CONCLUSIONS

A demonstration of a completed evaluation methodology is shown and design recommendations are included with regard to how to implement the identified assessments from the survey results. The literature review addressed how design variables can be strongly associated with social and cultural variables for a specific target audience.

This study provides a guideline for a consumer-targeted website design evaluation methodology that fulfills the essential goal of creating a satisfying user experience. The components of this methodology work cohesively as a whole. First, they study the social and culture context of the target audiences and consider their unique physical, emotional, and cognitive needs. It then considers how these needs affect their decision-making framework to give a solid foundation for the design work. It also takes into consideration how consumers' insights and thoughts can be used to determine the focus for the design. Finally, it includes a guideline of how to graphically address the identified assessments in a design.

This same method can be applied to the real world of design to evaluate and create successful consumer-oriented solutions for a wide range of design problems.

APPENDIX A. INSTITUTIONAL REVIEW BOARD APPROVAL

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office of Research Assurances
Vice Provost for Research
1138 Pearson Hall
Ames, Iowa 50011-2207
515 294-4566
FAX 515 294-4267

DATE: May 22, 2007

TO: Fei Huang
158 Design

CC: Debra Satterfield
277 Design

FROM: Jan Canny, IRB Administrator
Office of Research Assurances

IRB ID: 07-273

Study Review Date: 15 May 2007

The Institutional Review Board (IRB) Chair has reviewed the project, "The Changing Experience Design of Birthing Hospitals in China" (IRB ID 07-273) and has declared the study exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b), Exempt Category (2). A description of this exemption category can be found in the list on the next page. Please note that you must submit all research involving human participants for review by the IRB. Only the IRB may make the determination of exemption, even if you conduct a study in the future that is exactly like this study.

The IRB determination of exemption means that this project does not need to meet the requirements from the Department of Health and Human Service (DHHS) regulations for the protection of human subjects, unless required by the IRB. We do, however, urge you to protect the rights of your participants in the same ways that you would if the project was required to follow the regulations. This includes providing relevant information about the research to the participants.

Because your project is exempt, you do not need to submit an application for continuing review. However, you must carry out the research as proposed in the IRB application, including obtaining and documenting (signed) informed consent if you have stated in your application that you will do so or if required by the IRB.

Any modification of this research should be submitted to the IRB on a Continuation and/or Modification form, prior to making any changes, to determine if the project still meets the Federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB proposal will need to be submitted and approved before proceeding with data collection.

APPENDIX B: LETTER OF INFORMATION

ISU IRB # 1	07-273
EXEMPT DATE:	15 May 2007
Initial By:	jlc

LETTER OF INFORMATION

Title of Study: The Changing Experience Design of Birthing Hospitals in China
Investigators: Principle Investigator: Fei Huang, MFA candidate
 Major Professor: Debra Satterfield, BS, MFA

This is a research study. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time.

INTRODUCTION

This research is examining changes in attitudes about childbirth as expressed by Chinese men and women. It will analyze what factors about a birth experience seem to be the most significant to young couples when selecting a birthing hospital. It will also examine how those hospitals market their birthing experiences. It will try to examine how emotional variables and medical variables are weighted in the minds of young Chinese couples and how these variables are marketed to the women and their spouses. It will also examine how attitudes have evolved over the last 20 years by comparing generational responses.

DESCRIPTION OF PROCEDURES

If you agree to participate in this study, your participation will last for fifteen minutes. You will be asked to answer a set of questions. You will also be asked demographic information at the end of the survey.

You may skip any question that you do not wish to answer or that makes you feel uncomfortable.

RISKS

There are no foreseeable risks in this study.

BENEFITS

This survey will not yield a direct benefit to you. However, the knowledge or information gathered in this research will help future research in experience design for health care.

COSTS AND COMPENSATION

You will not be compensated for participating in this study and there is no cost in participating in this survey.

PARTICIPANT RIGHTS

Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled. During the testing, if you feel uncomfortable at anytime you can quit.

CONFIDENTIALITY

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies and the Institutional Review Board (a committee that reviews and approves human subject research

APPENDIX C: SURVEY INSTRUMENT

ISU IRB # 1	07-273
EXEMPT DATE:	15 May 2007
Initial By:	jlc

Survey about the Changing Experience of Childbirth in China

This test takes about fifteen minutes; it is opinions and perceptions about the experience of childbirth hospitals in China. The test results are confidential and are for research purposes only. If you feel uncomfortable about the test question, you can quit anytime without being punished.

1. Gender

☐ Male ☐ Female

2. What is your age?

☐ 20 – 24

☐ 25-29

☐ 30-35

☐ 36-44

☐ 45 – 49

☐ 50-54

☐ 55-60

☐ Over 60

3. What was your age at the time of your baby's birth?

☐ Under 20

☐ 20 – 24

☐ 25-29

☐ 30-35

☐ Over 35

4. What is your highest level of education?

☐ Middle School

☐ High School

☐ College

☐ Graduate School

5. What is/was your occupation?

☐ Office worker

☐ Business Owner

☐ Medical Profession

☐ Stay-at-home parent

☐ Other, please specify. _____

6. What year was your baby born? _____

7. How important are the following features of a birthing experience in influenced you to choose a specific hospital or child birth facility?

5- very important, 4-Important, 3- Uncertain, 2-Not Important, 1- not important at all.

	Very Important	Important	Uncertain	Not Important	Not Very Important
Water Birth	5	4	3	2	1
Cesarean Section	5	4	3	2	1
Private Room	5	4	3	2	1
Beautiful rooms and facilities	5	4	3	2	1
Private attending doctors and/or nurses	5	4	3	2	1
Special gifts for the parents and baby	5	4	3	2	1
Family can attend the birth	5	4	3	2	1

ISU IRB # 1 07-273
 EXEMPT DATE: 15 May 2007
 Initial By: jlc

Reasonable Cost	5	4	3	2	1
Close distance to home	5	4	3	2	1
Close distance to Friends or Family	5	4	3	2	1
Good reputation	5	4	3	2	1

8. How important is the birth of your child when compared to other life experiences such as your wedding or your graduation?

☐ The most important life experience
☐ A very important life experience, similar to a wedding or graduation
☐ Important but not more than a wedding or graduation
☐ Less important than a wedding or graduation

9. How did you learn about the hospital that you used for your child's birth?

☐ Friends or family recommended it
☐ Advertising in newspaper or billboard
☐ Advertising mailed
☐ Internet advertising or search
☐ Previous experience with that hospital

Other, please specify: _____

10. How important are the following facilities/issues in choosing your birthing hospital?

5- very important, 4-important, 3- uncertain, 2-not important, 1- not important at all.

	Very Important	Important	Uncertain	Not Important	Not Very Important
Lamaze	5	4	3	2	1
Provided Classes for Breast feeding	5	4	3	2	1
Provided Classes for Infant care	5	4	3	2	1
Provided Classes for Infant CPR	5	4	3	2	1
Opportunity to choose a type of birth processes such as natural childbirth or Caesarean Section	5	4	3	2	1
Quality of the medical staff of doctors and nurses	5	4	3	2	1

11. Did any things about your hospital make you feel uncomfortable or dissatisfied?
Please be specific. _____

12. What do you expect the doctor or nurse to do for you to make your birth experience highly successful?

ISU IRB # 1 07-273
EXEMPT DATE: 15 May 2007
Initial By: jlc

13. Did any things about your hospital make you feel comfortable or satisfied?
Please be specific. _____

14. What is the name of the hospital where your child was born? _____

Thank you for your time!

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